



April 8, 2025

Doug Coenen
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Hazardous Waste Prevention & Management Section
Waste and Materials Management Program
Wisconsin Department of Natural Resources
101 S. Webster Street
P.O. Box 7921
Madison, WI 53707-7921

Re: File No. FID268224880
EPA ID No. WID003967148
FPOR Submittal for Veolia ES Technical Solutions, LLC (VESTS)
1275 Mineral Springs Drive, Port Washington, WI 53074

Dear Doug Coenen:

Veolia ES Technical Solutions, LLC (VESTS), located at 1275 Mineral Springs Drive in Port Washington, is pleased to submit this Feasibility and Plan of Operation Report (FPOR) dated April 8, 2025, for the Wisconsin Department of Natural Resources review and approval. The FPOR dated April 8, 2025, is intended to replace the previously approved FPOR.

In response to the Call-in Letter issued March 12, 2024, VESTS is looking to continue operating a decades-long Treatment Storage and Disposal Facility (TSDF) consisting of the hazardous waste container storage units and the mercury recovery/retort operations. The TSDF manages a wide variety of hazardous waste for primarily industrial clientele. Hazardous wastes from other generators are stored and consolidated in the TSDF until a substantial load of wastes can be collected on a route-run with licensed transport vehicles.

If there are any questions or concerns regarding this submittal, please feel free to reach out to me at (262) 225-1043 or at justin.provo@veolia.com.

Sincerely,

A handwritten signature in black ink that reads 'Justin Provo'.

Justin Provo
Environmental Health & Safety Manager
Veolia ES Technical Solutions, LLC

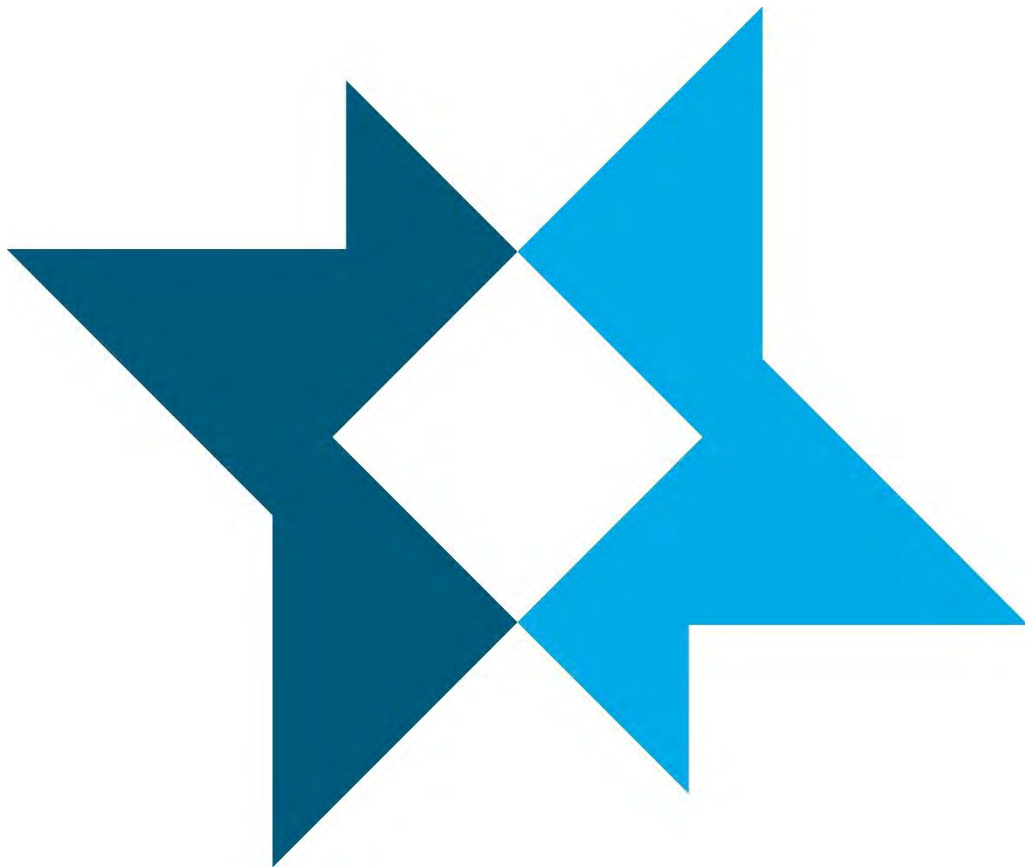
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Report

Feasibility and Plan of Operation Renewal



Veolia ES Technical Solutions, LLC

Port Washington, Wisconsin

April 2025

Project ID: 24V007

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science and engineering challenges.**

Feasibility and Plan of Operation Renewal Distribution

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Feasibility and Plan of Operation Renewal

Project ID: 24V007

Prepared for
Veolia ES Technical Solutions, LLC
1275 Mineral Springs Drive
Port Washington, WI 53074

Prepared by
Foth Infrastructure & Environment, LLC

April 2025

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**Feasibility and Plan of Operation Report for
Hazardous Waste Storage Facility and
Miscellaneous Units – Retort Operations**

**Veolia ES Technical Solutions, LLC
1275 Mineral Springs Drive
Port Washington, Wisconsin
WID988566543**

NR 670.0011(4)(a)

I, Scott Thibodeau, certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Certified by:  4/2/25
Scott Thibodeau
General Manager
Date

NR 670.011(2)

I, Scott Thibodeau, as General Manager for Veolia ES Technical Services, LLC is providing authorization to the Operations Manager or EHS Manager as having responsibility for the overall operation of the above referenced facility to serve as the duly authorized representative of Veolia ES Technical Solutions, LLC for signature of reports of the above referenced facility.

Authorized by:  4/2/25
Scott Thibodeau
General Manager
Date

**Feasibility and Plan of Operation Report
Record of Changes**

**Veolia ES Technical Solutions
1275 Mineral Springs Drive
Port Washington, Wisconsin
WID #988566543**

Review Date	Revision #	Revision Date	Revision Description	Initials

Review Date	Revision #	Revision Date	Revision Description	Initials

Feasibility and Plan of Operation Renewal

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Appendix NN	Waste Analysis Plan

List of Abbreviations, Acronyms, and Symbols

<	less than
>	greater than
AADT	Annual Average Daily Traffic
ACGIH	American Certified General Industrial Hygienists
AED	automated external defibrillator
AOC	Areas of Concern
AST	aboveground storage tank
ATSDR	Agency for Toxic Substances and Disease Registry
bgs	below ground surface
chs.	chapters
CAP	Corrective Action Plan
CAPU	Corrective Action Plan Update
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFL	compact fluorescent lamps
cm	centimeter
cm ²	square centimeter
CPR	cardiopulmonary resuscitation
DOT	Department of Transportation
EC	Emergency Coordinator
EH&S	Environmental, Health & Safety
EPA	United States Environmental Protection Agency
FA Report	Financial Assurance Report
Foth	Foth Infrastructure & Environment, LLC
FPOR	Feasibility and Plan of Operation Report
HASP	Health and Safety Plan
HEPA	high efficiency particulate air
HID	high intensity discharge
HHW	household hazardous waste
HHW Plan of Operation	Plan of Operation for the Household Hazardous Waste
IH	Industrial Hygiene
ISM	Incremental Sampling Methodology
JSA	Job Safety Analysis
LEPC	Local Emergency Planning Commission
m ³	cubic meter
manifest	Uniform Hazardous Waste Manifest
MEBA	Mercury Export Ban Act
mg/kg	milligram per kilogram
mg/m ³	milligram per cubic meter
MPAP	Malfunction Prevention and Abatement Plan
NEIC	National Enforcement Investigations Center
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NIOSH	National Institute of Occupational Safety and Health
NIST	National Institute of Standards and Technology
NOI	Notice of Incompleteness
NR	Natural Resources
OSHA	Occupational Safety and Health Administration

List of Abbreviations, Acronyms, and Symbols (continued)

PEL	permissible exposure limits
PLC	Programmable Logic Controller
PM	Preventive Maintenance
PPE	personal protective equipment
PPMW	parts per million by weight
psi	pounds per square inch
PWFD	City of Port Washington Fire Department
PWPD	City of Port Washington Police Department
RCL	residual contaminate level
RCRA	Resource Conservation and Recovery Act
RFA	RCRA Facility Assessment
RFD	reference dose limits
RFI	RCRA Facility Investigation
SCBA	Self-Contained Breathing Apparatus
SDS	Safety Data Sheets
SPCC	Spill Prevention, Control, and Countermeasure Plan
Stats.	Statutes
SVOC	semi-volatile organic compounds
SWMU	Solid Waste Management Units
SWPPP	Storm Water Pollution Prevention Plan
TCA	Technical Customer Advisor
TCLP	toxicity characteristic leaching procedure
TRI	Toxics Release Inventory
TSDF	Treatment, Storage and Disposal Facility
TWA	time-weighted average
µg/L	microgram per liter
µg/m ³	microgram per cubic meter
µg/ft ²	microgram per cubic feet
USEPA	U.S. Environmental Protection Agency
UV	ultraviolet
VESTS	Veolia ES Technical Solutions, LLC
VFD	variable frequency direct
VO	volatile organic
VOC	volatile organic compound
WAP	Waste Analysis Plan
WDNR	Wisconsin Department of Natural Resources
WIP	Waste Information Profiles
Wis. Adm. Code	Wisconsin Administrative Code
WOC	Wisconsin Oven Corporation

1. Introduction

Veolia ES Technical Solutions, LLC (VESTS) has developed this Feasibility and Plan of Operation Report (FPOR) to comply with the licensing requirements of NR 670.014 and NR 664. The VESTS Treatment, Storage and Disposal Facility (TSDF) consists of the hazardous waste container storage units and the mercury recovery/retort operations being classified as miscellaneous units. The TSDF operates under EPA I.D. WID988566543 and Wisconsin Department of Natural Resources (WDNR) FID# 246076050 and is located at 1275 Mineral Springs Drive, Port Washington, Wisconsin. The TSDF also operates as a destination facility for the recycling of universal waste including mercury containing lamps and mercury containing devices. The TSDF also serves as a permanent household hazardous waste collector under NR 666.909.

The TSDF allows for the economic management of a wide variety of hazardous waste for primarily industrial clientele. Hazardous wastes from other generators are stored and consolidated in the TSDF until a substantial load of wastes can be collected on a route-run with licensed transport vehicles. In this manner, economic waste disposal is available to industrial and state and local government agencies and the TSDF functions as a regulatory benefit to large and small quantity generators. In some instances, generators cannot ship some of their wastes off site within the 90-day accumulation period. Such wastes can be transported and stored in the TSDF (within the permitted storage capacity) until proper disposal can be achieved. This practice reduces storage violations at generators and provides professional management of the waste. Furthermore, the TSDF provides a service to the local community for hazardous waste storage (pending disposal) of miscellaneous small quantity waste from municipal agencies such as the highway department, fire department, and police department. The TSDF also has developed a household hazardous waste (HHW) program whereby local residents can dispose of wastes such as pesticides and herbicides, used paint thinners, paint and household batteries. The ability to consolidate wastes is also a benefit that is consistent with federally mandated waste minimization laws.

The facility also operates as a large quantity universal waste handler. The facility collects mercury-containing lamps, devices and articles, universal batteries and computer equipment for sorting and then off-site shipment.

1.1 Past Hazardous Waste Operating Licenses

1.1.1 First Hazardous Waste Operating License

The first Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA) Part A hazardous waste license application for the facility was submitted to the WDNR on October 9, 1987, by then owner Aqua-Tech, Inc. Subsequently, Aqua-Tech, Inc. received the first Hazardous Waste Operating License on December 27, 1989, for a storage facility with a maximum storage capacity of 10,000 gallons. The license duration period was a fixed term not-to-exceed 10 years from the date of issuance, which ended December 27, 1999.

During the term of the first operating license, the TSDF was issued, modifications of ownership including from Aqua-Tech, Inc. to Mineral Springs Corporation (September 23, 1991) and to Superior Hazardous Waste Group, Inc. (September 30, 1993). On October 31, 1996, the WDNR approved a Class 1 Modification associated with the name change of the company to Superior

Special Services, Inc. Also, under the first license several modifications to the license and the FPOR were approved by the WDNR, including:

- ◆ Expanding the maximum storage capacity of the facility from 10,000 gallons to 20,00 gallons (May 27, 1992).
- ◆ Addition of bulking and containerization operations (June 1992).
- ◆ Class 2 Modification regarding the addition of newly listed waste codes that were published in the EPA final rule in the February 9, 1995, Federal Register (January 27, 1997).
- ◆ Class 1 Modification to add 12 waste streams to the list of waste (June 18, 1998).

On November 13, 1998, the WDNR issued a call-in letter which began the renewal process for the second hazardous waste operating license.

1.1.2 Second Hazardous Waste Operating License

On May 27, 1999, the FPOR was submitted as part of the application for the second operating license for the TSDF. On May 17, 2001, the WDNR issued a "Notice of Incompleteness" (NOI) letter associated with the May 27, 1999, FPOR submittal. Subsequent responses were made by Superior Special Services, Inc. on September 10, 2001, and September 13, 2001, and to the EPA on February 14, 2002, and February 27, 2002. The WDNR issued a second NOI on March 25, 2002. Responses were submitted on May 14, 2002, and July 11, 2002. On December 26, 2002, a Class 1 plan modification for a name change from Superior Special Services, Inc. to Onyx Special Services, Inc. was issued by the WDNR. A notice of completeness and a preliminary determination was issued by the WDNR on July 15, 2003. On September 17, 2003, the WDNR determined that an environmental impact statement was not needed for the FPOR changes. On September 25, 2003, the WDNR issued the Final Determination to Conditionally Approve the FPOR. On February 6, 2004, the WDNR issued the second Hazardous Waste Operating License #6008 for Container Storage Facility to Onyx Special Services, Inc. The license duration period for the second license was a fixed term not-to-exceed 10 years from the date of issuance to February 6, 2014. During the term of the second license, the TSDF submitted various modifications to the license, including:

- ◆ On April 5, 2004, Onyx Special Services, Inc. submitted a Class 1 modification request to transfer the ownership and change of name to Onyx Environmental Services, L.L.C. On June 25, 2005, the WDNR issued a Conditional Class 1 Modification Determination for the name change.
- ◆ On October 20, 2004, Onyx Environmental Services, L.L.C. submitted a Class 1 modification for an update to the FPOR - Contingency Plan.
- ◆ On June 27, 2006, Onyx Environmental Services, L.L.C. submitted a Class 1 modification request to the WDNR for a name change to VESTS. On June 28, 2006, the WDNR issued a Class 1 Plan Modification Preliminary and Final Determination for the name change.
- ◆ On October 2, 2006, VESTS submitted a Class 1 modification for an update to the FPOR Contingency Plan.

- ◆ On June 19, 2007, VESTS submitted a Class 1 modification for an update to the FPOR Contingency Plan.
- ◆ On January 25, 2008, VESTS submitted a Class 1 modification for an update to the FPOR Contingency Plan and Section 5.2 of the FPOR Communication Equipment.
- ◆ On June 3, 2009, VESTS submitted a Class 1 modification for an update to the FPOR Contingency Plan.
- ◆ On December 17, 2010, VESTS submitted a Class 1 modification for an update to the FPOR Contingency Plan.
- ◆ On July 11, 2012, VESTS submitted a Class 1 modification for an update to the FPOR Contingency Plan. On July 16, 2012, the WDNR issued an acknowledgement of the modification.
- ◆ On January 4, 2013, VESTS submitted a request for relief on the one-year storage limitation for elemental mercury that is subject to the Mercury Export Ban Act (MEBA). On January 17, 2013, the WDNR issued a letter indicating the WDNR would use its enforcement discretion to allow VESTS to store elemental mercury that is subject to MEBA for more than one year provided that VESTS complies with the conditions in the letter.

1.1.3 Third Hazardous Waste Operating License

On August 7, 2012, the WDNR issued a call-in letter to begin the renewal process for the third hazardous waste operating license. The call-in letter requested the existing mercury recovery (retort) operating units be added to the license application as miscellaneous units.

The following correspondence and activities have occurred under the third hazardous waste operating license renewal:

- ◆ On August 6, 2013 VESTS submitted a Class 1 modifications to the WDNR which included the installation of two, one-way gate emergency exits to be located in the facility fence perimeter, the removal of the loading dock located in the northeast corner of the building, and for the installation of a solid waste compactor unit to be located directly north of the former northeast loading dock.
- ◆ On October 11, 2013, WDNR issued a "Notice for Receipt of a FPOR for Veolia ES Technical Solutions, L.L.C." and a copy of the Class 1 public notice that was published on September 26, 2013.
- ◆ On October 14, 2013, WDNR issued an "Acknowledgement of a proposed Feasibility and Plan of Operation Report" and two invoices to cover the review of the document.
- ◆ On November 8, 2013, VESTS issued a letter regarding the intent to submit a proposed modification to the Miscellaneous Units - Mercury Recovery/Retort Operations covered in the FPOR.

1.1.4 Fourth Hazardous Waste Operating License

On March 12, 2024, the WDNR issued a call-in letter to begin the renewal process for the fourth hazardous waste operating license.

The following correspondence and activities have occurred under the fourth hazardous waste operating license renewal:

- ◆ On October 23, 2017, VESTS submitted to the WDNR a Class 1 modification to update the list of emergency coordinators contained in Section 8.3.1 and Table 8-1. Acknowledgement of the Class I Modification was issued by the WDNR on October 31, 2017.
- ◆ VESTS submitted a Class 1 License Modification Request dated April 11, 2018, to make modifications to enhanced mercury emission control devices and operational controls for the three mercury recovery ovens (retorts) flue stacks. In submittals dated June 13, 2018, August 27, 2018, and October 30, 2019, VESTS subsequently modified the request after WDNR review comments.
- ◆ VESTS submitted a Class 1.1 (WDNR approval required) License Modification Request under a cover letter dated November 15, 2019, received on November 19, 2019. Electronic files of this submittal were also received on November 19, 2019. The submittal consisted of revised sections of the FPOR bearing page dates of October 30, 2019. The submittal described proposed modifications to the facility's approved FPOR in response to the July 2017 mercury release.
- ◆ VESTS submitted a Class 2 License Modification Request dated March 31, 2021, in accordance with Condition 17e of the WDNR Class 1.1 License Modification Determination (Conditional Approval) dated June 23, 2020. Specifically, Condition 17e required making the submission of a Corrective Action Plan (CAP). The CAP included a detailed description of all work needed to complete corrective action ("Remaining Work" as of January 1, 2021. A Site Investigation Report was submitted to the WDNR on February 18, 2021. On June 29, 2021, the WDNR responded to VESTS Class 2 Modification Request with a NOI that included 12 different identified issues with the submittal. A revision to the CAP was requested along with a response to the NOI comments. VESTS submitted the revised CAP (CAP Revision 1) along with a response to the NOI comments as requested on November 4, 2021. The WDNR responded on February 3, 2022, to this submittal with a Class 2 Modification Final Determination and Conditional Approval. The contents of VESTS' November 4, 2021, submittal included the following:
 - Veolia CAP Revision I Transmittal Letter dated November 4, 2021
 - Veolia CAP REV 1 dated November 4, 2021
 - Veolia CAP Estimated Costs dated November 4, 2021
- ◆ On September 30, 2021, VESTS submitted to the WDNR a Class 1 modification to update the list of emergency coordinators contained in Section 8.3.1 and Table 8-1. The modification also included the addition of Section 8.17 Quick Reference Guide (NR 662.262(2) and Appendix HH.

- ◆ On August 16, 2024, VESTS submitted a Class 1 Permit Modification to update to the Contingency Plan's First Alternative, Second Alternative, and Third Alternative contacts and information. On August 20, 2024, VESTS received an Acknowledge of Receipt from the WDNR regarding the modification.

1.2 Pre-Application Meeting (NR 670.014(2)(v))

Since this renewal of the FPOR for VESTS is not requesting changes to the facility's operations, and also not requesting changes that are defined as a "significant change" in NR 670.431(1) (i.e., a Class 3 modification), a pre-application public meeting and other public notices were not required prior to this renewal submittal application to the WDNR in accordance with NR 670.01(2)(v).

For historical reference, a copy of the April 4, 2013, Public Notice in the Wisconsin State Journal regarding a pre-application public meeting scheduled for May 9, 2013, and Public Notices published in the Ozaukee Press on April 4, 2013, and broadcasted Public Notices about the public meeting are provided in Appendix B.

Per NR 670.432 the WDNR will make the required public notifications once this FPOR renewal is received.

1.3 Local Approval and Negotiations (NR 670.014(2)(w))

Since this renewal of the FPOR for VESTS is not requesting an expansion of the existing facility, local approvals are not required from affected municipalities in accordance with NR 670.014(2)(w).

For historical reference, a copy of the local approval request to affected municipalities and its certified mail receipt has been sent to the Waste Facility Siting Board and is included in Appendix C of this FPOR. On March 25, 2013, the State of Wisconsin Waste Facility Siting Board issued a letter indicated none of the affected municipalities took the action required to participate in the negotiation and arbitration process. As a result, the Waste Facility Siting Board determined VESTS could continue to seek the permit/license renewal of the hazardous waste storage facility and is not required to negotiate or arbitrate under Wisconsin Stats. § 289.22.

1.4 Regulatory Considerations

This FPOR complies with chs. NR 664 and 670, for plan and operational requirements. In order to facilitate the WDNR review of this FPOR, VESTS has completed the TSDF License Checklist to cross-reference applicable code requirements with sections of the FPOR. The checklist is located in Appendix KK.

1.4.1 Noncompliance with Plans or Orders (NR 670.014(2)(x))

In accordance with NR 670.014(2)(x)1.a., no one person owning greater than or equal to 10% legal or equitable interest in their assets. VESTS also owns a solid waste facility located at 215 Park Street, Port Washington, WI 53074 and a hazardous waste facility located at W24 N9451 Boundary Road, Menomonee Falls, WI 53051. All plan approvals and orders relating to these facilities are being complied with. Additionally, VESTS has multiple hazardous and non-hazardous facilities located throughout the United States.

It should be noted that VESTS is not proposing new construction in this FPOR renewal and therefore, s. 289.34, is not applicable.

1.4.2 License Application (NR 670.010(1))

VESTS has completed, signed, and submitted copies of the license application to the WDNR, as described in NR 670.010 and sections NR 670.070 to NR 670.073.

1.4.3 Notification of Regulated Waste Activity (NR 670.013)

The updated "Notification of Regulated Waste Activity" and Part A documentation are contained in Appendix D. The Part A application reflects the addition of retort ovens as miscellaneous operating units as requested by the WDNR and in accordance with NR 670.013.

1.4.4 Appropriate Plan Review and License Fees (NR 670.012(12))

In accordance with NR 670.010(12), VESTS will be invoiced by the WDNR and submit the required payment for the Site Report Review of Operation License Application (Part A and Feasibility and Plan of Operation Report) for the hazardous waste container storage unit and mercury recovery/retort - miscellaneous units.

1.4.5 Other Permits and Authorizations (NR 670.014(2)(x)2.a)

The TSDF operates under several other WDNR or other agency licenses. Copies of the current licenses and permits retained by the TSDF at the time of the FPOR renewal. Per NR 670.014(2)(x)2.a, a summary of the project, such as the purpose, history, background, relevant local, state, and federal permits or approvals and zoning changes is included in the Environmental Assessment and Environmental Justice Review Report included in Appendix MM. A list of local, state, and federal permits and licenses are listed below and are available upon request. A copy of the Notice of Intent, Industrial Storm Water General Discharge Permit and a copy of the facility Storm Water Pollution Prevention Plan (SWPPP) are available upon request.

- ◆ Hazardous Waste Storage License #6008
- ◆ Hazardous Waste Treatment License #4585
- ◆ Solid Waste Processing License #3870
- ◆ Air Operating Permit #246076050-S02

2. Facility Location

2.1 General Description of Facility (NR 670.014(2)(a))

2.1.1 Property Description (NR 670.014(2)(s)1 thru 6)

The VESTS TSDF is located at 1275 Mineral Springs Drive in the Northwestern $\frac{1}{4}$ of the Southeastern $\frac{1}{4}$ of Section 32, Township 11 North, Range 22 East, in the City of Port Washington, Ozaukee County, Wisconsin which consists of 11.45 acres. A legal description for the property is included in Appendix F. The site location is shown on Drawing D-1, Existing Conditions, which also includes a three-mile radius surrounding the TSDF.

The TSDF is located in an industrial park on the southern edge of Port Washington. The areas to the immediate north, south, and east of the property are zoned industrial and currently contain light manufacturing industry. The area immediately west of the property is zoned industrial and is a commercial storage facility (Drawing D-7, Zoning District Map). Mineral Springs Drive borders the property toward the east. Mineral Springs Drive intersects Sunset Road approximately $\frac{1}{4}$ mile north of the site. Maritime Drive borders the property toward the south.

No parks, hospitals, or nursing homes are located within $\frac{1}{2}$ mile of the facility. A topographic map showing a minimum distance radius of 1,000 feet surrounding the TSDF is provided on Drawing D-1, Existing Conditions (NR 670.014(2)(s)).

Drawing D-1 depicts the following elements:

- ◆ Map scale and date (NR 670.014(2)(s)1)
- ◆ 100-year floodplain area (NR 670.014(2)(s)2, see Appendix MM)
- ◆ Surrounding surface water and intermittent streams (NR 670.014(2)(s)3.)
- ◆ Surrounding land uses (NR 670.014(2)(s)4.)
- ◆ Wind rose including prevailing wind speed and direction (NR 670.014(2)(s)(5).)
- ◆ Map orientation (NR 670.014(2)(s)6.)

A correctional facility is located approximately $\frac{1}{2}$ mile west of the facility. There are no known areas of archeological or historical significance on the property. There are no known areas of critical habitat for threatened or endangered species (NR 670.014(2)(k)6.a.).

2.1.2 Site Features (NR 670.014(3)(c) and NR 670.014(2)(s)7 thru 12)

The site features of the TSDF facility are provided on Drawing D-1 which depicts the following elements:

- ◆ Map scale and date (NR 670.014(2)(s)1.).
- ◆ Surface water on site (NR 670.014(2)(s)3.).
- ◆ Map orientation (NR 670.014(2)(s)6.).
- ◆ Legal boundaries of the hazardous waste facility property (NR 670.014(2)(s)7.).
- ◆ Site access control including fences and gates (NR 670.014(2)(s)8.).

- ◆ Injection and withdrawal wells both on site and off site (NR 670.014(2)(s)9.).
- ◆ Map showing building locations (NR 670.014(2)(s)10.).
- ◆ Access roads, sewers and underground utilities (NR 670.014(2)(s)10.) There are no groundwater monitoring wells currently located on the site.
- ◆ Barriers for drainage or flood control (NR 670.014(2)(s)11.).
- ◆ Location of operational units within the HWM facility site (NR 670.014(2)(s)12.).

2.1.3 Facility Layout Features (NR 670.014(2)(s)10.)

The facility layout features for the TSDF buildings is provided on Drawing D-3, Facility Layout, which depicts the following elements:

- ◆ Map scale and date (NR 670.014(2)(s)1.).
- ◆ Map orientation (NR 670.0144(2)(s)6.).
- ◆ Building layout, storage locations, and miscellaneous treatment (retort) operations (NR 670.014(2)(s)10.).
- ◆ Loading and unloading areas (NR 670.014(2)(s)10.).
- ◆ Operating units where hazardous waste will be treated and stored (NR 670.014(2)(s)12.).
- ◆ Proposed physical changes to the facility (NR 670.014(2)(s)10.).
 - Concrete pad and mezzanine structure located on the western side of the building to support mercury control devices for the three mercury recovery oven (retorts) flue stacks.
 - Relocation of three retort flue stacks (S12, S13, S17).

2.1.4 Hydrology (NR 670.014(2)(k)3 and 6.b.)

Information regarding water resources and hydrology applicable to the VESTS TSDF is below as well as in the Environmental Assessment and Environmental Justice Review included in Appendix MM.

There is large wetland complex located approximately ¼ mile southwest of the site. This wetland complex drains toward a spring near Sunset Road and discharges to Mineral Springs Creek. Mineral Springs Creek, which flows toward the northeast, is approximately 0.5 miles north of the TSDF. Mineral Springs Creek then eventually discharges to Lake Michigan approximately 1½ miles northeast of the TSDF.

Other nearby surface waters include two small basins across Mineral Springs Drive approximately 500 feet east of the TSDF and a sedimentation basin located on the south side of Maritime Drive approximately 400 feet southwest of the TSDF. These basins do not receive

runoff from the TSDF. The Milwaukee River is located approximately three miles west of the site but also does not receive runoff from the TSDF.

2.1.5 Geology and Soils

Information regarding geology and soils applicable to the VESTS TSDF is in the Environmental Assessment and Environmental Justice Review included as Appendix MM.

2.1.6 Hydrogeology

See Section 2.5.2.

2.1.7 Climatology

Information regarding climatology applicable to the VESTS TSDF is in the Environmental Assessment and Environmental Justice Review included as Appendix MM.

2.2 Traffic Patterns and Roadways (NR 670.014(2)(j))

The principal travel route for trucks traveling to the TSDF is from Wisconsin State Highway 32 (Spring Street) located west of the TSDF. From Spring Street, truck traffic will take Maritime Drive to the east and turn north onto Mineral Springs Drive to the facility. The truck routes to and from the TSDF are shown on Drawing D-4, Area Street Map.

Current traffic volume counts for the area near the TSDF have been recorded by the Wisconsin Department of Transportation (DOT) for Annual Average Daily Traffic (AADT). The nearest volume count locations included Sunset Road (County Highway CC) west of County Highway C (1500 AADT), Sunset Road east of State Highway 32 (2500 AADT), State Highway 32 south of Sunset Road (7500 AADT), and State Highway 32 south of Maritime Drive (10,700 AADT). Based on an average of 15 trucks per day visiting the TSDF, the facility traffic volume is a relatively small portion of the AADTs for the surrounding area.

A typical cross-section of the roadways near the TSDF is shown on Drawing D-5, Roadway Typical Cross Section. According to the Port Washington Public Works Department, the roadways near the TSDF do not have weight or bearing capacity restrictions.

The traffic routing at the TSDF consists of entering and exiting from Mineral Springs Drive through a security gate and loading or unloading at the necessary location at the facility. A truck parking area is used in the southeast corner of the facility for off-duty vehicles. Truck activities are concentrated to and from the loading dock area on the north and south sides of the TSDF. Personal vehicles use the same entrance to the site as trucks, but park in designated parking areas along the edge of the asphalt in the northeast corner of the facility.

The driveway areas of the TSDF, including the parking areas and loading dock drive area, are constructed of asphalt. The construction of these areas included a 3-inch layer of asphalt covering 8-inch thickness of $\frac{3}{4}$ -inch crushed limestone, treated with a traffic binder. The load bearing capacity of the asphalt pavement is 3,000 pounds per square feet.

2.3 Environmental Impact Statement (NR 670.014(2)(x)2.)

As part of VESTS' relicensing the TSDF, an environmental impact assessment is required under NR 670.014(2)(x)(2). Specific requirements that must be included in this FPOR in order to complete the environmental impact assessment or review are found in NR 670.014(2)(x)(2). An Environmental Assessment and Environmental Justice Review, included in Appendix MM, was completed as part of this FPOR renewal which will aid the WDNR in determining the need for an environmental impact report or environmental impact statement.

2.3.1.1 Statutory Authority and Local Approval (NR 670.014(2)(w))

Since the initial operating license was issued, the WDNR has been exercising their authority under s. 289.31, Wisconsin Statutes (Stats.) and NR 670.050(1) to issue annual renewals to the TSDF of the effective period of up to 10 years. Because VESTS chooses to operate and maintain the TSDF, VESTS is required to submit all of the plans and reports that are specified in NR 660.07 and NR 670.010(5), Wisconsin Administrative Code (Wis. Adm. Code), and the applicable sections of NR 664.

Under Wisconsin Stats. § 289.22, VESTS is required to determine whether local approvals are necessary. On January 15, 2013, VESTS submitted written notification to the local municipalities, City of Port Washington, Town of Port Washington, the Town of Grafton, and Ozaukee County, regarding the license renewal process and seeking a determination whether local approvals are necessary for "siting" the existing TSDF. A copy of the local approval request to the affected municipalities and the certified mail receipts was sent to the Waste Facility Siting Board and is included in Appendix C of this FPOR. On March 25, 2013, the State of Wisconsin Waste Facility Siting Board issued a letter indicating that none of the affected municipalities took the action required to participate in the negotiation and arbitration process. As a result, the Waste Facility Siting Board determined VESTS could continue to seek the permit/license renewal of the hazardous waste storage facility and is not required to negotiate or arbitrate under Wisconsin Stats. § 289.22. Therefore, VESTS is able to submit this FPOR to the WDNR.

2.4 Determination of Need (NR 670.014(2)(x)3.)

VESTS, through its existing licensed TSDF, provides hazardous and universal waste services, as well as mercury containing waste recycling/retort services to generators, including electrical contractors, utilities, small and large industries, commercial operations, retail stores, remediation contractors, and local, state, and federal government agencies. The service area routinely covered by VESTS includes the upper Midwest but provides mercury recovery operations for customers across the U.S. VESTS is one of a few companies in Wisconsin that provides our services through a licensed TSDF. The TSDF affords the generators in Wisconsin and EPA Region V an economical waste disposal alternative, promotes regulatory compliance, and provides a well-managed and secure method for managing wastes.

Over the past 38 years the TSDF has been in operation, the hazardous waste collection, transportation, and disposal industry has consolidated, and many firms have gone out of business. While waste minimization efforts by generators have reduced the overall volume of waste requiring storage, and ultimately treatment and disposal, VESTS recognizes their services are still needed by the regulated community. The TSDF has advanced its capabilities to service the generators of universal waste. The facility has changed over the years through independent

submittals to the WDNR to cover the regulatory aspects of managing and recycling universal waste. In order to fulfill the generators' needs, VESTS is seeking a license to continue the operation of the existing TSDF. VESTS is not seeking any planned expansions of the TSDF

In addition to relicensing the TSDF as described in this FPOR, there are a number of other alternatives, including taking no action, expanding, reducing or modifying the scope of the TSDF. By the WDNR taking no action on relicensing, the TSDF would be forced to close, resulting in adverse economic, social, and environmental impacts. These impacts include an increased cost of waste collection, transportation, and disposal for the regulated community, less regulatory compliance by generators to transport waste off site for disposal within the required timeframes, and possible illegal disposal of wastes resulting in environmental damage.

The expansion, reduction, or modification alternatives do not provide viable alternatives at this time. The physical expansion and increase in storage capacity of the facility would require a capital investment that is not deemed feasible at this time and is not being requested by the TSDF. The reduction or modification of the facility would result in an operation that was less efficient and increase the cost structure associated with the management of the TSDF. This could result in the TSDF no longer being a viable business venture and result in the closure of the facility, ultimately resulting in the same adverse impacts as the no action alternative.

Overall, Wisconsin's demand for Hazardous Waste Treatment and Disposal exceeds its in-state capacity except for solvent recovery. The facility accepts hazardous and universal waste material with the majority coming from Wisconsin generators. This in itself demonstrates the need for Mercury Retort operations. It has been able to provide generators in the State of Wisconsin with a cost-effective facility for the treatment of hazardous and universal wastes. In addition, the facility provides a consolidation and distribution point for drummed waste materials for the generators of hazardous waste materials in the state. The facility handles universal and hazardous waste for treatment, consolidation, and transshipment.

2.5 Groundwater Protection (NR 670.014(3))

2.5.1 Applicability

VESTS is submitting the following information regarding protection of groundwater as applicable to NR 670.014(3). However, VESTS believes the container storage areas and the miscellaneous unit retort operations are exempt from the requirements of NR 670.014(3) and NR 664.0090.

2.5.1.1 Hazardous Waste Storage Rooms

The July 3, 2003, RCRA Facility Assessment (RFA) Report completed by the WDNR identified the hazardous waste storage rooms as Solid Waste Management Unit #1 (SWMU #1). The WDNR concluded in the RFA Report that SWMU #1 had "...a very low potential for having caused environmental contamination". A copy of the RFA Report is provided in Appendix I. The WDNR also concluded that no investigation (RCRA Facility Investigation [RFI]) or remedial activities were required for SWMU #1.

Furthermore, VESTS believes the SWMU #1 meets the following conditions of NR 664.0090(2)(b):

1. The container storage rooms are located in an engineered structure that has not changed since the RFA.
2. The container storage rooms have received containers of liquid waste, but the liquids have not been deposited in the unit.
3. The indoor container storage rooms are designed and operated to prevent liquid, precipitation, and other run-on and run-off.
4. The containers holding the liquid hazardous waste serve as the inner layer for containing the liquid, while the storage room ceiling, walls, and floor serve as the outer layer of containment.
5. VESTS conducts weekly inspections of the storage rooms to identify any leaking containers.
6. VESTS will continue to conduct the weekly inspections of the storage rooms during the active life of the unit and during closure activities. A long-term care period is not required for the container storage room.
7. Based on the past 38 years of operations and the construction of the storage rooms, there is a reasonable degree of certainty that hazardous constituents will not migrate beyond the rooms.

2.5.1.2 Retort Operations

The RFA Report also identified the retort operations as SWMU #5. The RFA Report concluded "the retort operation may have some potential for accumulation of contaminants from fallout to the roof then to the soil at the base of the roof drains". On October 19, 2004, VESTS submitted to the WDNR the RFI Report (Appendix J). The RFI results for SWMU #5 (Areas of Concern [AOC] #1) indicated near surface soil impacts (0 to 1.5 feet below ground surface [bgs]) of mercury (0.23 to 2.4 milligrams per kilogram [mg/kg]) above the ground water protection residual contaminant level (RCL) of 0.21 mg/kg. The mercury concentrations in soil samples for below 2 feet bgs were below the RCL. The RFI Report also presents groundwater monitoring data from a well located hydraulically sidegradient (MW-1). The data indicates no detectable concentration of mercury (<0.11 microgram per liter [µg/L]) in the groundwater. Based on the information, there appears to be a low potential for any groundwater impacts associated with SWMU #5.

Furthermore, VESTS believes the SWMU #5 meets the following conditions of NR 664.0090(2)(b):

1. The retort operations are located in an engineered structure that has not changed since the RFA.
2. The retort operations generally receive liquid mercury as either a component to a device or instrument or as a contaminant to debris or media (e.g., soil, personal protective equipment [PPE]). The purpose of the retort operations is to remove the mercury from the devices and debris (refer to Section 4.5 of the FPOR). The mercury is recovered as a liquid in condensers, containerized and shipped off site as a commercial product.

3. The retort operations are conducted indoors and segregated from the container storage areas. Being located indoors, it prevents liquid, precipitation, and other run-on and run-off.
4. The containers holding the mercury devices and debris serve as the inner layer for liquid mercury. The mercury flask designed to accumulate the recovered mercury in a DOT shippable container and serves as the inner layer for the mercury. The building's ceiling, walls, and floor serves as the outer layer of containment.
5. VESTS also conducts daily mercury air monitoring as part of WDNR air permit requirements for the retort operations.
6. VESTS will continue to conduct daily mercury air monitoring as part of the WDNR air permit requirements.
7. Based on the construction of the building and the air pollution control devices for the retort operations, there is a reasonable degree of certainty that hazardous constituents will not migrate beyond the retort room and potentially impact ground water.

2.5.2 Hydrogeology (NR 670.014(3)(b))

Information regarding hydrogeology applicable to the VESTS TSDF is in the Environmental Assessment and Environmental Justice Review included as Appendix MM.

2.5.3 Groundwater Monitoring Data (NR 670.014(3)(a) and (3)(f))

As part of the 2004 RFI, one temporary monitoring well (MW01) was installed in the north central portion of the TSDF. Refer to Appendix J for the October 2004 RFI Report which contains Drawing B1 and provides the former location of MW01. During the RFI, one groundwater sample was collected from MW01 and analyzed for volatile organic compounds (VOCs) (Method 8260), semi-volatile organic compounds (SVOC) (Method 8270), dissolved metals, excluding mercury (Method 6010) and dissolved mercury (Method 7471A). A second groundwater sample was collected and analyzed for dissolved barium and selenium. The results of the groundwater sampling are contained in RFI Report (Appendix J). Based on the findings of the 2004 RFI, VESTS believes hazardous constituents have not been detected in the groundwater at the time of the license application (license application renewal).

2.5.4 Groundwater Detection Monitoring Program (NR 670.014(3)(f) and NR 664.0098)

In accordance with NR 670.041(3)(f), VESTS contracted AECOM to establish a groundwater detection monitoring program which meets the requirements of s.NR 664.0098(1) through (6). The groundwater detection monitoring program consists of the following items:

1. A network of groundwater monitoring wells at the points of standard application are located for establishing hydraulic gradient, hydraulically downgradient of the RCRA storage rooms and retort operations and intersecting the uppermost aquifer.

2. The construction of the wells and a monitoring program to determine the groundwater surface elevation each time groundwater is sampled and annually determine the groundwater flow rate and direction.
3. A groundwater sampling plan and statistical comparison procedures to be utilized in evaluation groundwater monitoring data.
4. A list of indicating parameters and frequency to collect samples to provide a reliable indication of presence of hazardous constituents including total VOCs using method SW-846 8260; total SVOCs using method SW-846 8270; and dissolved metals using SW-846 method 6010, except for mercury using SW-846 method 7471A.

2.6 Corrective Action and Solid Waste Management Units (NR 670.014(4))

2.6.1 Background

The TSDf was initially licensed to store hazardous waste in 1988 and prior to the construction of the facility, the land was vacant. No previous industrial use at the site existed that would have caused the need to evaluate whether past operations had impacted the site or the need to implement corrective actions.

2.6.1.1 RCRA Facility Assessment

On July 3, 2003, the WDNR issued a RFA. The RFA is provided in Appendix I. The RFA examined the waste streams at the facility, identified SWMUs, documented releases which have occurred at the facility, and identified AOCs in accordance with the EPA RFA guidance and WDNR Waste Management Program Corrective Action Guidance. On October 22, 2003, the WDNR issued a memorandum indicating the RFA had become final and there were no public comments.

2.6.1.2 RCRA Facility Investigation (NR 670.014(4)(c))

Under Condition #23 of the WDNR's September 25, 2003 "Final Determination to Conditional Approval", the TSDf was required to develop and submit a Work Plan for a RFI to address the findings of the RFA. On November 25, 2003, the RFI Work Plan was submitted to the WDNR. On January 6, 2004, the WDNR issued their approval to the RFI Work Plan.

On June 15, 2004, Montgomery Watson Harza issued a report outlining the initial RFI results and requested approval to complete additional testing. The WDNR granted verbal approval for the additional sampling on June 21, 2004. The final RFI Report was submitted to the WDNR on October 19, 2004. In addition, on November 10, 2004, a follow-up letter was submitted to the WDNR regarding additional sampling results associated with SWMU #9. Copies of the final RFI Report is included in Appendix J.

2.6.1.3 Proposed Re-Evaluation of RCRA Facility Investigation Environmental Data

In the May 6, 2014, Notice of Incompleteness for the FPRO letter, the WDNR requested representative samples of sediment, soil, and surface water be analyzed from mercury and other parameters with similar methods of detection as identified in the RFI Report included in Appendix J. Specifically, the WDNR requested the following:

1. Four representative samples of soils in a 10 centimeter (cm) profile (depth) be collected within 100 cm of each side of the parking areas.
2. Collection of sediment sampling at the point of outfall into the surface water pond on site, which is consistent with methods in Appendix J.
3. Collection of one representative surface water collected from the pond located on the property north of the parking area and facility.

VESTS contracted AECOM to prepare the work plan to collect the additional RFI data requested by the WDNR. The work plan also includes the collection of soil samples to update the RFI environmental data associated with the AOC #1, the roof drain on the north side of the facility, as outlined in Section 2.1 of the report in Appendix J.

VESTS understands the execution of the work plan will be incorporated into any required RFI and as an operating condition in the license.

2.6.1.4 Additional Monitoring Data

Over the past several years, VESTS has collected surface water run-off samples from the outfall discharging into the facilities retention pond (natural surface water). The collected water samples were analyzed for pH, oil and grease, biological oxygen demand, chemical oxygen demand, total lead, and total mercury. The sample results have been below the Multi-Sector General Permit Benchmark Levels. Analytical results are available on request.

2.6.2 Updated SWMU List (NR 670.014(4)(a)1. thru 5.)

The operations of the TSDF have generally remained constant since the issuance of the RFA and completion of the RFI. However, the following changes have occurred at the facility:

- ◆ In July 2003, an air permit application was submitted to the WDNR for the construction of the ASE MR-25 Retort Operation (P12), which consists of two retort ovens. On November 12, 2004, an air permit application was submitted to the WDNR for the conversion of the construction permit to an operation permit. The WDNR issued Operating Permit OI-DJH-339-OP on March 1, 2005. On August 31, 2009, a permit renewal application for operation permit was submitted to the WDNR.
- ◆ On August 17, 2010, a minor permit revision was submitted to the WDNR for the installation of the facility's 500-kilowatt back-up emergency generator.

The above changes have not resulted in the establishment of any new SWMUs.

In accordance with NR 670.014(4)(a), Table 2-2 lists the past and current SWMUs. Four new or updated SWMUs have been added to the list of units identified during the WDNR RFA completed in 2003, including:

- ◆ SWMU #10 consists of the lamp processing equipment moved in 2002 to the north side of the building and the compact fluorescent lamp line.

- ◆ SWMU #11 consists of a collection bin for commingled recyclables (e.g., office paper, plastic bottles and food containers, aluminum beverage cans, metal food cans) located along the east side of the operations building.
- ◆ SWMU #12 consists of the non-hazardous solid waste roll-off box location used to accumulate general facility non-hazardous solid waste and post retort non-hazardous debris. SWMU #12 was associated with the past SWMU #7.
- ◆ SWMU #13 consists of the 90-day hazardous waste accumulation area. SWMU #13 is used to accumulate mercury-containing phosphor powder generated during the lamp processing operations; mercury-contaminated water generated from retort operations; mercury-contaminated debris generated from retort operations destined for microencapsulation; post retort non-hazardous solid waste debris; and post retort commercial product phosphor powder meeting the toxicity characteristic leaching procedure (TCLP) and land disposal restriction mercury levels and destined for rare earth element recycling.

Figure 1, Site Location Map, included in Appendix MM provides the topographic map showing the building location. Drawing D-8 shows the active SWMUs inside and adjacent to the building.

2.6.3 Releases of Hazardous Waste Constituents (NR 670.014(4)(b))

Hazardous waste at the facility has been stored in licensed sections of the TSDF, which will continue to operate after the new license is issued. In accordance with NR 670.014(4)(b), the operating record of the facility has been reviewed to identify any accidental release of hazardous waste constituents.

The TSDF immediately reports to the WDNR spills of hazardous materials occurring inside the buildings greater than five gallons and spills of hazardous materials occurring outside of the buildings and secondary containment on paved areas that drains to the storm water collection system greater than one gallon, and all spills occurring on non-paved areas. Table 2-1 lists the releases of hazardous materials that meet Condition #61 of the September 4, 2015 "Final Determination of Conditional Approval" that have occurred since the July 2003 RFA was published by the WDNR.

The TSDF has implemented timely mitigation actions for the above releases identified in Table 2-1. Based on the information, corrective measures do not appear to be necessary as part of the re-licensing process. No hazardous constituents are anticipated to be present in the soil or groundwater from the releases at the point of standards application at the time of this FPOR submittal.

The operating record includes the type and quantity of hazardous material or waste spilled, the location of the release, the source of the release, what actions were taken to clean up the release, and what actions were implemented to prevent the release from re-occurring. Because the releases were less than 10 gallons in size, confined to the secondary containment structures and mitigated, corrective action measures do not appear to be necessary as part of the re-licensing process.

3. Facility Description (NR 670.014(2)(a))

The VESTS TSDF, EPA ID# WID988566543 and WDNR FID# 246076050 is located at 1275 Mineral Springs Drive, Port Washington, Wisconsin.

The primary areas of the facility include the hazardous waste storage rooms, loading dock area, fluorescent light recycling area, mercury recovery/retort operations - miscellaneous units, HHW accumulation area, facility-generated hazardous waste accumulation area, and the office area. The areas associated with the TSDF license include the hazardous waste storage rooms and the mercury recovery/retort operations - miscellaneous units.

In addition to the summary information provided below, refer to Appendix LL, Facility Operations Summary for more details about the facility.

3.1 Hazardous Waste Storage Rooms (NRI 664.0176, NR 664.0177(3) and NR 670.015(1)(a))

Active areas of the TSDF storing ignitable and reactive waste are located at least 50 feet from the property line, as shown on Drawing D-2 (NR 664.0176). The detailed layout for the facility is shown on Drawing D-3. Drawing D-3 demonstrates the storage of hazardous waste containers, which are incompatible with other wastes or materials, are segregated in separate rooms and/or separated by berms or walls (NR 664.0177(3)).

The existing hazardous waste storage rooms were constructed in 1989 in accordance with the National Fire Protection Association (NFPA) "Liquid Warehouse" standard for flammable liquids. The WDNR approved the design of the storage rooms during the TSDF's initial licensing activities. The rooms consist of four-hour fire prevention concrete walls, ceiling, and floor (NR 670.015(1)(a)). The storage rooms have a total surface area of approximately 2,498 square feet for hazardous waste storage.

Storage Room 1 is divided into two segregated pods for storage. Each pod is segregated on three sides by concrete walls in combination with 3.5-inch-high concrete berms. The front area of the pods has a raised walkway to allow for the removal or placement of hazardous waste containers. This walkway in itself serves as a berm in front of each pod. The surface area of the Pod 1A in Room 1 is approximately 360 square feet. The surface area of the Pod 1B in Room 1 is approximately 232 square feet, including a separately segregated 68 square feet enclosed sub-room. The sub-room is constructed of two-hour fire prevention concrete walls, door, ceiling, and floor.

Storage Room 2 is divided into three bermed pods. Pods 2B and 2C are segregated by 6-inch-wide and 2-foot-high impervious concrete wall. The area comprising Pods 2A and 2B have three access points. Pod 2C has two access points. The surface areas of the three pods in Room 2 are 394 square feet, 400 square feet, and 336 square feet, respectively.

Storage Room 3 is divided into two sections, each containing three bermed pods. Each pod is segregated by 6-inch-wide and 2-foot-high impervious concrete walls. The front area of the pods has a raised walkway to allow for the removal or placement of hazardous waste containers. This walkway in itself serves as a berm in front of each pod. The surface areas of the three pods on the north side of Room 3 (i.e., Pods 3A, 3B, and 3C), are 98 square feet, 95 square feet, and

98 square feet, respectively. The southern section of Storage Room 3 also contains three bermed pods (i.e., Pods 3D, 3E, and 3F). The surface areas of the three pods are 117 square feet, 114 square feet, and 118 square feet, respectively.

Containers stored inside the storage rooms typically range in size from less than one-pint bottles packaged in DOT approved boxes up to DOT approved cubic yard boxes on a pallet. Containers are properly covered and sealed to eliminate air emissions or leakage of waste.

Storage Rooms 1 and 3 have two access points each. One access is to the outside and the other to the loading dock area. Storage Room 2 has three access points for Pods 2A and 2B. Pod 2C has two access points. The access points for Room 2 are from the loading dock area and the area east of the mercury retort room. Access points are equipped with a fire door and are only accessible to authorized VESTS personnel.

3.2 Mercury Recovery/Retort Operations

The mercury recovery/retort operations are contained inside a segregated 2,070 square foot room. The room is used to de-pack, sort, process, and retort mercury-contained devices, mercury containing compounds and solutions, and mercury contaminated debris. Details regarding the mercury recovery/retort operations are described in Section 4.5 of the FPOR.

4. Facility Operations

4.1 General

4.1.1 Projected Waste Types, Volumes, and Accumulation Time

The following sections describe the volumes and accumulation time of hazardous waste and universal waste stored in the TSDF.

4.1.1.1 Hazardous Wastes

The types of hazardous wastes stored at the TSDF are indicated in the Part A Application (Appendix D). The maximum permitted volume of hazardous waste stored in the facility is 20,000 gallons. The hazardous wastes are stored or packaged in DOT specification/authorized containers, ranging in size from less than a quart to as large as a DOT specification cubic yard box or tote.

The hazardous wastes will be received at the TSDF only if properly manifested and identified in accordance to U.S. Environmental Protection Agency (USEPA) hazardous waste code, UN/NA Identification Number, and DOT shipping name. Very small quantity generator wastes, HHW, and non-hazardous wastes may be received by the facility without manifests. The general types of wastes that will be received at the TSDF include the following:

- ◆ Mercury-contaminated debris, mercury-containing phosphor powder, mercury-containing solutions, mercury compounds, spent solvents and solvent mixtures; spent oils (fatty and petroleum); spent acids (inorganic and organic); spent alkaline solutions and solids; cyanide and sulfide bearing wastes; halogenated mixtures; flammable and combustible wastes; water reactive wastes; poison/toxic wastes; oxidizers; certain pesticides and herbicides.

See Waste Analysis Plan (FPOR Section 6) for restricted wastes.

The majority of the projected volumes and weights of hazardous wastes stored at the TSDF will be mercury-contaminated debris and mercury-containing phosphor powder. Accumulation times for stored wastes inside the rooms will vary depending upon the type of waste and the approval review time required by the final disposal site. Generally, the maximum storage period is one year.

On August 7, 2012, the WDNR issued a call-in letter to begin the renewal process for the third hazardous waste operating license. The call-in letter requested the existing mercury recovery (retort) operating units be added to the license application as miscellaneous units.

The VESTS facility holds a Hazardous Waste Storage License #6008 for container storage as well as a Hazardous Waste Treatment License #4585 for the mercury retort system.

4.1.1.2 Universal Wastes

Universal waste destined for processing at the TSDF will be stored in the hazardous waste storage rooms and may include batteries (NR 673.02), thermostats (NR 673.04), mercury-containing lamps (NR 673.05), mercury-containing articles, and mercury-containing devices. The universal wastes will be stored or packaged in accordance with the DOT

regulations. Containers will range in size from less than a quart to as large as a DOT specification cubic yard box.

Some universal wastes may be manifested to the facility, but the majority of the universal waste will be received by the facility on bill-of-lading or other shipping papers.

The majority of the projected volumes and weights of universal wastes to be stored within the hazardous waste storage rooms will be mercury containing thermostats and equipment. However, these universal wastes may also include mercury-containing lamps. The largest percentage of these lamps will be 4-foot fluorescent lamps. Each 4-foot lamp weighs 0.62 pounds, which equates to approximately 0.075 gallons and will be used as a conversion factor for all lamps stored in the area. The other universal waste will be weighed and converted to gallons using a specific gravity of 8.34 pounds per gallon.

Accumulation times for stored universal wastes will vary. However, the maximum storage period is one year.

4.1.2 Management Structure

The management structure of TSDF personnel is presented on Figure 4-1. The structure consists of an Operations Manager who is responsible for the overall facility operations, permitting, and compliance. The Facility Manager is responsible for the daily operations of the TSDF. Material handlers and technicians perform the daily activities of the TSDF as described in this FPOR. Administrative assistants support the operations primarily in association with the recordkeeping aspects.

The number of employees at the TSDF may vary due to increases or decreases in the amount of waste brought through the TSDF, although certain operations require a specific number of people. In order to process waste materials, at least two people must be present at the TSDF.

4.1.3 Operating Hours and Daily Shutdown

Unless workload dictates otherwise, the TSDF operates during normal business hours (5:30 a.m. to 11:00 p.m.), or during non-business hours under the direct supervision of the Operations Manager or an approved Alternate. A third shift (11:00 p.m. to 7:00 a.m.) will operate when workload for processing wastes necessitates. Normally, the only activities during off hours will be parking vehicles near the loading docks for loading/unloading equipment, tools, supplies, etc., maintenance activities, or in support of off-site emergency response actions.

At the end of the working day, the following steps are taken to shut down the facility:

- ◆ Containers will be maintained with lids and devices securely closed unless adding or removing waste, sampling, monitoring, inspecting, repacking, commingling, or performing maintenance. The lid or closure device will be secured closed when a filling, repacking, or commingling container becomes full, when the attendant leaves the area, or whenever loading has ceased for 15 minutes or more. This does not apply to empty containers as defined in NR 661.07.
- ◆ New waste containers (bulk drums or repack drums) are properly labeled.

For the 10-day operation, containers that have not been checked into storage pods will remain in transit and stored in trailers parked in the lot area of the TSDF. Manifests for these wastes will be returned to the manifest cabinet inside the TSDF. The wastes will then be checked into the facility the following operating day.

- ◆ After checking for personnel in the storage rooms, the doors to the rooms are closed. After checking for personnel in the trailers, the loading dock doors are closed and locked.
- ◆ Tools are returned to their proper places.
- ◆ Lights in the storage rooms, loading dock, and warehouse area are turned off.
- ◆ Office equipment and lights are turned off.
- ◆ After personnel have left the facility, the outer doors are locked and entrance gate closed.

4.1.4 Personal Protective Equipment (NR 670.014(2)(h)(5))

The following sections describe the type of PPE personnel working in the TSDF and retort operation will wear under various operating conditions.

4.1.4.1 Normal Operations

Personnel entering the TSDF under normal working conditions (e.g., removal or placement of drums); repacking intact containers of chemicals, sorting light bulbs, batteries, and computer equipment; and accepting HHW will be required to wear, at a minimum, Level D PPE.

Level D PPE Includes:

- a. Safety boots with steel shank and toe.
- b. Safety eyeglasses or chemical splash goggles.
- c. Uniforms.

4.1.4.2 Bulking Operations and Retort System

Personnel conducting bulking of compatible chemicals or working with the mercury retort system will be required to wear, at a minimum, Level C PPE.

Level C PPE includes:

- a. Half-face respirator with safety eyeglasses or chemical splash goggles, full-face cartridge respirator or supplied-air respirators with full-face protection.
- b. Chemical resistant protective clothing including, but not limited to, overboots, suits, and gloves.
- c. Safety boots with steel shank and toe.

4.1.4.3 Emergency Response

Personnel working in the TSDF under the implementation of the Contingency Plan and emergency procedures may be required to wear Level B PPE. Air monitoring results and site conditions will determine the level of PPE required.

Level B PPE Includes:

- a. Self-Contained Breathing Apparatus (SCBA).
- b. Chemical resistant protective clothing including, but not limited to, over-boots, suits, and gloves.
- c. Safety boots with steel shank and toe.

PPE and decontamination equipment for use in TSDF emergency response is outlined in Section 8, Hazardous Waste Contingency Plan. Personnel involved with closure activities will also wear PPE.

4.1.4.4 Retort Operations and Lamp Processing Operations

Personnel working in the TSDF's retort operations and performing certain lamp processing operations will be required to wear a minimum of Level C PPE. Level B PPE may also be used during the retort and lamp processing operations. Air monitoring results and site conditions will determine the level of PPE required. See Section 4.1.4.2 and Section 4.1.4.3 for descriptions of Level B PPE and Level C PPE.

4.2 Container Storage and Management

The following sections will describe how containers of hazardous waste will be managed during the facility operations and in storage.

4.2.1 General Management (NR 670.014(2)(h)1)

Hazardous waste containers retained in the TSDF are kept closed and sealed to ensure minimal vapor escape and to prevent spillage if the containers were accidentally overturned. Drums (e.g., 85 gallons, 55 gallons, etc.) are sealed tightly with a top head and bolt ring or a bung cap. Other intermediate sized containers are sealed with tight-fitting lids (e.g., metal, plastic, and polyethylene). Drums and containers are checked for proper sealing immediately upon receipt into the TSDF and on a weekly inspection as part of the inspection and recordkeeping procedures. Containers holding ignitable or reactive waste are located at least 50 feet from the facility's property line.

Drums and containers are opened in the TSDF when a Level 1 Physical Evaluation is required for verification of properly manifested waste, or when adding or removing (e.g., bulking) waste to the drum. Drums and containers are opened with non-sparking tools (e.g., brass bung wrench) to prevent ignition of flammable vapors.

Drums and containers such as lab packs may be repacked into larger sized containers or different material type containers (e.g., fiber vs. metal) to facilitate proper and economic disposal at off-site RCRA disposal sites. The inside containers of lab packs (e.g., reagent

bottles) may be consolidated or commingled. Lab packs from different generators may be repackaged or commingled in the same outside container and re-profiled as TSDF generated waste. The TSDF recordkeeping procedures will track the status of each individual container during storage and to the final off-site RCRA treatment disposal site.

Handling of drums during unloading, loading, and during movement through the TSDF is done through use of a drum cart or forklift. Handling in this manner minimizes the possibility for drum rupture or spilling. Other smaller volume containers are carefully handled in an upright position to prevent leakage from the lid area.

Storage of drums and containers is completed according to proper segregation into the appropriate storage rooms and pods. These drums will be segregated in accordance with DOT requirements. In order to allow for the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the facility in an emergency, an aisle space of at least 24 inches will be maintained in the storage pods. The 24 inches of aisle space is based on the approximate diameter of a 55-gallon drum. If a drum was found to be leaking, it could be removed without having to move other drums. Alternatively, a 55-gallon drum could be easily brought into a pod, in order to transfer the contents of a leaking drum to a new drum.

The TSDF also handles containers smaller than 55-gallon drums. Spacing is maintained between the containers so that an inspection can be made for possible leaks. No drums or intermediate sized containers are stored in walkways, doorways, or adjacent building areas.

When cubic yard boxes, bags, and pallets are stored inside a pod, the aisle space is increased to allow for the movement of pallets for access to any leaking containers and continuing to maintain the minimum required aisle space. Smaller containers may be stored on top of larger containers in a manner that prevents accidental tipping.

4.2.2 Container Compatibility (NR 670.014(2)(i), NR 664.0017(2) thru (2)(e), and (3), and NR 664.0177)

VESTS utilizes as much information as is available to ensure wastes are managed to prevent any unwanted reactions or mixing of incompatible materials. VESTS has a full-time corporate Chemical Information Specialist on staff whose job responsibilities include performing research on chemical properties and compatibilities. This data is accumulated in VESTS' Chemical Database and is accessible to the Approvals Coordinator. The Approvals Coordinator, as part of the waste approvals process, uses this data and reviews waste streams received at the facility and ensures that they are being managed properly and in a manner that will prevent unwanted reactions.

Wastes received at the TSDF are reviewed for chemical characteristics and container compatibility. If a waste is potentially incompatible with the receiving container, the waste is immediately transferred into an appropriate compatible container (e.g., a corrosive acid waste received in a 55-gallon steel drum would be transferred into a drum with a corrosion-resistant liner). In addition, containers are inspected for leakage, degradation, and deterioration. Waste in problem containers are immediately transferred into compatible, stable containers (e.g., a dented, slow-leaking 55-gallon steel drum of waste paint would be over packed into a new 85-gallon drum).

Hazardous wastes are not placed into containers that previously contained incompatible materials (NR 664.0177(2)). Potential incompatibilities are determined by the Approvals Coordinator, with the assistance of the corporate support staff described above, by reviewing the chemical composition of the waste previously held in the container and the composition of the waste to be placed into the container. Residual incompatible materials in tankers or roll-off boxes will be removed prior to use. Residuals from the tankers and roll-off boxes will be removed at the destination disposal facility. Cleaning of tankers and roll-off boxes will not occur at the Port Washington facility. Containers that are deemed unusable for safe and proper storage of hazardous waste will not be utilized.

To prevent ignition or adverse chemical reactions by accidental mixing of incompatible wastes, containers of incompatible wastes are kept in separate storage rooms and pods of the TSDF (NR 670.014(2)(i) and NR 664.0017(1)). Also, incompatible wastes are not placed in the same container.

To prevent ignition or adverse chemical reaction during the bulking of wastes, the Operations Manager or designated Alternate makes an initial determination of chemical compatibility before the wastes are bulked (NR 670.014(2)(i)). The waste stream profiles are reviewed for the chemical properties and their potential to react with one another. Technical chemical reference materials will be used to review the incompatibility and reactionary properties of the chemicals. If technical reference materials indicate a waste stream is potentially reactive, the Operations Manager or designated Alternate will utilize the National Enforcement Investigations Center (NEIC) protocol to calculate the potential reactivity of the chemical compound. The NEIC protocol is presented in Appendix K. The data will be evaluated for the potential release of toxic gases, vapors, or fumes in a quantity sufficient to present a danger to human health or the environment, per NR 664.0017(2) and (3). Wastes are not bulked without the authorization of the Operations Manager or designated alternate.

Before a waste is bulked either into a drum, roll-off box, or tanker, it is tested to make sure it is compatible with the consolidated container contents. A small quantity of waste is taken from the drum and placed into a 4-ounce jar. A small amount of each new waste is added to this jar. The mixture will be observed for heat generation, phase transformation, vapor generation, color change and other physical changes that potentially denote a reaction. If no reaction takes place, the waste is added to the consolidated container. The 4-ounce jar containing the mixed waste will be emptied into the receiving container. If a reaction does take place, the chemical or waste is set aside and repacked.

Open flames, smoking, cutting and welding, hot tools, or sparking equipment are not allowed in the storage pods. Cutting and welding operations are conducted in other areas of the facility under a hot work permit. "No Smoking" and "Danger – Unauthorized Personnel Keep Out" signs are placed at each entrance of the TSDF. A "No Smoking" sign is also posted on the entrance doors. The signs are legible from a distance of at least 25 feet.

4.3 Bulking Operations

The TSDF conducts hazardous waste bulking operations. The bulking operations are not considered hazardous waste treatment because the physical, chemical, or biological character or composition of the waste will not be changed so that the waste is rendered less hazardous. The bulking operations are subject to the requirements of NR 664.0017(2) regarding the

commingling of compatible wastes and NR 664.0172 regarding the management of containers. Wastes that are candidates for bulking include wastes of the same waste codes, wastes of similar USEPA codes, and chemically compatible wastes. Before wastes are re-containerized or bulked, the Operations Manager, or appointee, makes an initial determination of chemical compatibility based on incoming waste characterization information supplied by the generator and the analytical results of the qualitative screening analysis. Only those waste streams that readily lend themselves to this process are considered, and only those wastes approved by the Operations Manager or appointee are bulked. Also, bulking is not intended to eliminate USEPA codes. Wastes are only bulked if they are chemically compatible, and not in such a way as to remove a characteristic from the waste.

Wastes with the same USEPA code may be bulked. For example, several drums of F006, wastewater treatment sludges from electroplating operations, would be bulked together in a Intermediate Bulk Container or roll off and sent to a TSDF which, by permit, can only treat F006 wastes in bulk. Not all wastes with the same waste codes are bulked, only wastes which are chemically compatible. D002 acids for example are not bulked with D002 bases.

Wastes with similar waste codes may be bulked together provided that they are chemically compatible. Chemically compatible wastes, with or without USEPA codes, may be also be bulked. For example, a drum of fuels may contain spent xylene (F003), virgin xylene (U239), spent toluene (F005), virgin toluene (U220), gasoline from a HHW collection program (D001), and non-regulated motor oils.

USEPA codes for each waste will be indicated on the outgoing hazardous waste manifest for the bulked material. Individual waste streams that are candidates for bulking include but are not limited to:

- ◆ Flammables, ignitables, combustibles, and non-regulated oils
- ◆ Chlorinated solvents for reclamation or disposal
- ◆ Acids for deactivation
- ◆ Alkalines for deactivation
- ◆ Solid listed and characteristic hazardous waste

Wastes that are classified as non-hazardous solid waste may also be bulked at the facility. The facility is permitted to conduct solid waste processing in accordance with the Solid Waste Facility Processing License (Appendix E).

The advantages of bulking wastes are numerous. Lab packs are often incinerated. However, there are certain wastes that can be bulked, then treated by more efficient methods than incineration. Corrosive materials, for example, can be simply neutralized. Some TSDF's will use these wastes (particularly caustics) to treat other wastes rather than using virgin products. Flammable liquids can be used in fuel blending for energy recovery.

Bulking is also consistent with the federally mandated waste minimization laws. A typical 55-gallon lab pack contains only about 15 gallons of actual waste, with the balance being an absorbent such as vermiculite. During incineration, the entire lab pack is fed into the incinerator, absorbent and all. This creates more ash than would be generated if only the waste was incinerated. This ash then has to be tested, stabilized, and buried in a secure landfill. By using alternate methods that are designed for specific types of waste, only the actual waste is treated

while the amount of unnecessary residue created is minimized. The ability to shred and compact also results in a reduction in the number of drums of waste undergoing treatment.

The TSDF maintains as part of the operating records, a record of which hazardous waste have been bulked and re-containerized.

4.3.1 Repacking of Lab Packs

Once the material has been approved for repacking, the following procedures are followed:

1. The drums that the wastes are repacked into are taken into the appropriate storage pod by a drum cart or forklift. If a larger drum for the appropriate waste category has not already been started, an empty drum will be utilized. The drums containing ignitable wastes are grounded to eliminate the possibility of fire due to a static charge, and only non-sparking tools are used. The drums are constructed of materials that are chemically compatible with their contents.
2. Facility personnel use appropriate PPE. At least two people will be working in the TSDF when re-packing operations are completed.
3. Inventory sheets are reviewed for compatible wastes. Personnel find the appropriate containers and verify the label on the inner container matches the inventory sheet. The material is then put into the appropriate larger repacked drum.
4. Once a drum is filled, the drum is placed into the appropriate storage pod. Waste drums are labeled in accordance with the procedures outlined in Section 7.2 of the FPOR. The drums will be labeled with an accumulation date indicating the oldest date of inventory for the individual original container.

4.3.2 Drum Consolidation

The filling of partially full drums can occur after a review of the chemical hazards and by compatibility testing. The procedure(s) used to remove and transfer material from one container to another is determined by the type of material to be handled and the container in which it is received. These processes are either conducted in the storage pods or the loading dock area, all of which are equipped with the proper fire suppression and spill containment devices. Consolidation activities will only occur when more than one person is on the premise and the employees have visual or voice contact with each other. The employees will have immediate access to a telephone located on the loading dock area.

Prior to bulking into container, the Operations Manager or a designated Alternate will evaluate the waste streams and containers in accordance with the requirements of Section 4.10, Air Emissions Management. A determination will be made whether Level 1 or Level 2 standards apply to the "in light material service." The term "in light material service" means the container is used to manage a material of which the vapor pressure of one or more of the organic constituents is greater than 0.3 kilopascals (kPa) at 20°C and the total concentration of these constituents is equal or greater than 20% by weight.

1. Containers of liquid: These containers are pumped either by vacuum pumps or by positive displacement pumps, directly into larger containers, via fixed piping or

compatible product hose. When the transferring involves Level 2 containers (>0.46 cubic meter [m³] or >120 gallons), submerged fill pipes will be used for transferring the liquid. Level 2 containers having "in light material service" will not be transferred.

2. Containers of liquid/solid mix: Multi-phase materials are the most difficult to manage. Often, it is best to separate the phases. These materials are emptied, by using a forklift mounted inverter, into a specially designed container holder. This container allows for the straining out of the solids phase and decanting off the liquid phase. Light material will be handled in a manner that minimizes the release of vapors to the atmosphere through the use of good engineering practices. The lid or closure devices on the containers will be secured closed when the consolidation container becomes full, when the attendant leaves the area, or whenever operations have ceased for 15 minutes or more. This does not apply to empty containers as defined in NR 661.0007(2). Level 2 containers having "in light material service" will not be transferred.
3. Containers of solids: Solids are removed from containers primarily through the use of a forklift mounted drum inverter. Level 2 containers having "in light material service" will not be transferred.

4.3.3 Bulking Into Tankers

Note: Bulking operations are not currently conducted at the facility. Prior to initiating any bulking activities, VESTS will submit a formal notification to the WDNR to ensure full compliance with all applicable RCRA regulations and permit requirements governing such operations.

Liquid drums to be bulked into tankers are stored in the storage pods. Prior to pumping, the drums are moved to the loading dock area. The storage pods are designed to be able to contain a minimum of 10% of the total volume of wastes stored and on average are designed to contain 30% of the volume stored. The specific spill retention capacity of the storage pods is described in Section 5.5.1 of the FPOR. The loading dock area is comprised of a continuous base concrete slab designed to contain any spills that would occur during loading/unloading procedures. The floor is designed to slope away from the doors so as to prevent any spills from escaping the building. The tanker will be parked in the south loading dock area during the bulking operation. A portable collection basin is placed under the hosing connections prior to conducting the bulking operation to collect any incidental residue from hosing connections or disconnection.

The existing trailer parking area is comprised of a concrete slab, sloped to aid in spill containment. At the base of the slope is a drain trench. The drain trench has been sealed and the outlet is locked closed. If a spill were to occur, the spill would be contained in this area and would be pumped into the vacuum truck. The transport tankers will then be placed directly into transport for off-site disposal.

4.3.4 Bulking Into Roll-Offs

Note: Bulking operations are not currently conducted at the facility. Prior to initiating any bulking activities, VESTS will submit a formal notification to the WDNR to ensure full compliance with all applicable RCRA regulations and permit requirements governing such operations.

The bulking of hazardous waste drummed solids into roll-off box occurs in the south loading dock. The floor of the area is concrete and is able to contain any spilled solids. Spilled solids can be simply swept up and placed into the roll-off. The roll-off box will be placed directly into transport by manifesting the waste to the off-site disposal location.

4.4 Transportation Operations

The operations of the TSDF are supported by the VESTS' licensed transportation services that transports incoming hazardous wastes from generator facilities and transports outgoing waste to the appropriate treatment or disposal facilities. Unless workload dictates otherwise, loading and unloading of waste occurs during normal hours (5:30 a.m. to 11:00 p.m.), or during non-business hours under the approval of the Operations Manager. The operations are principally conducted in the loading dock areas along the south side of the facility (Drawing D-3, Facility Layout). The operations include reworking loads of containers between licensed vehicles and the TSDF areas. Until the wastes are received by the TSDF, as described in Section 5 of the Waste Analysis Plan included as Section 6 of the FPOR, they remain in transit and manifested. The waste will be received into the TSDF, if so designated by the manifest, within 24 hours upon receipt.

As part of VESTS' transportation license, the facility can operate as a 10-day transfer facility. The hazardous wastes remain in transit and manifested in transportation vessels, containers, or trailers in the parking lot area or the southern loading dock. While the vehicles are parked inside VESTS' facility, the manifests are stored in a cabinet in the facility. The location of the parking lot is depicted on Drawing D-2, Site Features.

4.5 Miscellaneous Unit – Mercury Recovery/Retort Operations (NR 670.014(2)(h)6.)

The maximum daily throughput for the units is 25,000 pounds per day. The units are identified on Drawing D-3, Facility Layout, as R3, R4, and R5. These units' sources and control devices are covered under a WDNR issued Air Pollution Operation Permit Renewal No. 246076050-S02 and Wisconsin Regulations NR 439.11.

On August 31, 2009, VESTS submitted a Renewal Application for the Air Pollution Control Operation Permit 01-DJH-339-OP for the continued operation of units R1, R2, R3, and R4, and identifies the operations as the following processes (P), stacks (S), control devices (C) and fugitive emissions (F).

On December 6, 2013, VESTS submitted a Construction Permit Application for the construction and operation of unit R5. This construction permit application and its subsequent updates includes all on-site processes and replaces the renewal application submitted August 31, 2009. The construction of unit R5 and the removal of units R1 and R2 is covered under the WDNR issued Air Pollution Construction Permit No. 13-KB-181. Units R1 and R2 were removed under the regulatory classification as exempt metal recovery units under NR 666.100(4).

This application was originally submitted to the WDNR on December 6, 2013. In response to requests for additional information from the WDNR, the permit application was updated June 17, 2014, July 18, 2014, and July 25, 2014.

On November 9, 2014, the WDNR issued Air Pollution Operating Permit Renewal No. 246076050-S01.

On March 12, 2018, VESTS submitted to the WDNR Bureau of Air Management a proposal to install additional air pollution control equipment on the three flue stacks associated with P10, P11, and P14. The flue stacks are identified in the facility Operating Permit No. 246076050-S02, as stacks S12, S13, and S17. The stacks exhaust combustion gases from three natural gas heated retort processes. Although the exhaust gases do not contain mercury under normal operating conditions, VESTS proposed installing activated carbon filters (C15, C16, C17) for the control of mercury vapors if an equipment failure were to occur. The control equipment also includes air-to-air heat exchangers to regulate the operating temperature that enter the activated carbon filters.

The installation of this equipment resulted in the following changes:

- ◆ Stacks S12, S13, and S17 were relocated to a point approximately 10 feet west of the building as shown on Drawing D-9, Stack Layout.
 - S12 was moved ~30 feet to the west of its current location
 - S13 was moved ~40 feet to the west of its current location
 - S17 was moved ~22 feet to the west of its current location
- ◆ Stacks S12, S13, and S17 are constructed with an unobstructed vertical discharge.
- ◆ The discharge height of each stack is 25 feet above ground surface.
- ◆ The addition of three new stacks/discharge points for the non-contact heated air from the heat exchangers.
 - RipSys Retort Natural Gas fired Oven (R3) – The natural gas combustion by-products from P10 pass through a heat exchanger (C12), then through sulfur-impregnated carbon adsorber (C15), and then flue stack (S12).
 - Magna Drum Retort Natural Gas fired Oven (R4) – The natural gas combustion by-products from P10 pass through a heat exchanger (C13), then through sulfur-impregnated carbon adsorber (C13), and then flue stack (S13).
 - One Wisconsin Oven Corporation (WOC) Natural Gas Fired Oven, a Model Batch-8/8/6-12G (R5) – The natural gas combustion by-products from P14 pass through a heat exchanger (C14), then through two parallel sulfur-impregnated carbon adsorber (C14) units, and then flue stack (S17).

These changes will have no net effect on the natural gas fuel usage and the facility maximum theoretical emissions of natural gas combustion by-products. There will be no change in the throughput for any of the processes associated with these ovens. Under normal operating conditions the exhaust from each of these stacks will not contain mercury and there will be no increased mercury emissions.

On March 25, 2019, the WDNR Bureau of Air Management issued Operation Permit No: 246076050-S02. The permit is provided in Appendix DD.

The following sections have been developed to meet the requirements of NR 670.023 and NR 664 Subchapter X. Some of the required information has already been provided in other sections of the FPOR relative to overall site conditions. In these instances, the reader will be referred to the relevant section(s).

4.5.1 Description of Units (NR 670.023(1) and (1)(a), and NR 664.0601)

The mercury reclamation/recovery retort units are located in the western section of the building (Drawing D-3, Facility Layout). The room is in a portion of the originally constructed and permitted facility. The retort room is a segregated 2,070-square-foot room. The room is constructed of an impervious concrete floor, concrete block walls, and built-up roof. The room has an isolated ventilation system, which collects and controls the fugitive mercury emissions from the retort room (F99).

4.5.1.1 RipSys (R3) and Magna Drum (R4) Retort Natural Gas Fired Oven (P10 and P11)

Retort units R3 and R4 are natural-gas heated chambers. Both oven chambers (P10 and P11) are used to process the drummed mercury contaminated wastes including phosphor powder generated during the lamp recycling operations; soils; sulfur-impregnated activated carbon; and mercury contaminated sludge. In addition, scrap metals contaminated with mercury; neon, ultraviolet (UV) and high intensity discharge (HID) contaminated lamps and glass may be processed in drums or a specially designed kettle in P11. The restrictions to the types of mercury-contaminated debris acceptable for retort processing is described in Section 6 of the FPOR. The process of reclaiming the elemental mercury is accomplished by heating the closed drums or kettle in the convection heated chamber to a temperature sufficient to volatilize the mercury contained in the waste. A vacuum is applied to the drums or kettle during heating. The mercury vapors are then condensed with water in a scrubber and packed tower. The liquid mercury accumulates in the condenser tank and then transferred into a metric ton keg. Once the keg is full, the mercury is marketed. The retort time cycle for P10 and P11 depend upon the type and composition of the waste materials.

Sulfur-impregnated carbon adsorber (C09) collects the mercury vapor not trapped by the condensing system. The air emissions then discharge through the process stack S11 to the stack S14 (Stack S14 Inlet) equipped with sulfur-impregnated carbon adsorber (C10).

Available equipment details regarding the equipment for P10 and P11 are contained in Appendix M.

The natural gas combustion by-products from P10 and P11 discharge through flue stack S12 and S13 respectively. Prior to discharge from S12 and S13, the combustion by-products travels through their respective air emission control system located on the mezzanine west of the building (Figure 4-2 of the Malfunction Prevention and Abatement Plan (MPAP) included in Appendix EE). Each system is comprised of an air-to-air heat exchanger, followed by a pre-filter and activated carbon filter unit. The flue stack blowers located on the oven pushes air through the system and the blowers on stack S12 and S13 pulls air through the system. The blowers will

be balanced to maintain a negative pressure inside the emission control system. The air-to-air heat exchangers use a blower to draw air through a pre-filter and then push that air through separate channels within the heat exchanger. The heated non-contact air from the heat exchangers is discharged to the atmosphere. The pre-filter boxes are sized to accept a standard 24x24x2-inch filter or equivalent. The activated carbon filters will be a Calgon HFVS 2000 filter or equivalent and is identified as control device C15 and C16 respectively. Variable speed direct drive blowers are installed after C15 and C16 and prior to the heat exchangers to achieve required flow rates. Filtered exhaust gases are discharged through stack S12 and S13 which have an unobstructed vertical discharge with a height of 25 feet above ground surface. The exhaust stacks for the non-contact heat exchanger air are located at a height where the heat from the exchanger will not present a safety hazard or adversely impact the building. Pressure, vacuum, and temperature sensors are installed on the S12 and S13 flue stack control streams and connected to control equipment capable of shutting off the oven burners if key operating parameters are exceeded. Sensors are tied into programmable logic controller (PLC) controls for P10 and P11. The control equipment on the flue gas stacks will operate at all times that the oven is in use.

4.5.1.2 Two ASE MR25 Retort Electric Ovens (R1 and R2)

Two other mercury reclamation/recovery retort units R1 and R2 located in the retort room at the time of the original submittal of this FPOR have been removed. Units R1 and R2 were removed under the regulatory classification as exempt metal recovery units under NR 666.100(4).

4.5.1.3 One Wisconsin Oven Corporation Natural Gas Fired Oven, and Model Batch-8/8/6-12G (R5)

The WOC Natural Gas Fired Oven (R5) has replaced two other mercury reclamation/recovery retort units R1 and R2 which were located in the retort room. These two units (P12) were ASE MR25 electric heated chambers. The R5 is a natural gas fired unit (P14). Mercury-containing devices (e.g., gas regulators), mercury-containing articles (e.g., switches and batteries), mercury-containing glass products (e.g., thermometers), mercury-containing lamps (e.g., HID), mercury-bearing compounds (e.g., mercuric oxide), and mercury-contaminated debris (e.g., PPE) are placed in vacuum vessels and then placed into the oven. The oven will also accept drummed mercury contaminated wastes including phosphor powder generated during the lamp recycling operations; soils; sulfur-impregnated activated carbon; and mercury-contaminated sludge. The restrictions to the types of mercury-contaminated debris acceptable for retort processing is described in Section 6 of the FPOR. The process of reclaiming the elemental mercury is accomplished by heating the oven chamber to a temperature sufficient to volatilize the mercury contained in the waste. A vacuum is applied to the drums and vacuum vessel during heating. The mercury vapors are then condensed inside a series of vacuum chambers lined (condensers) with tubes containing propylene glycol. The liquid mercury accumulates in the vacuum chambers and then transferred into a metric ton keg. Once the keg is full, the mercury is marketed. The retort time cycle for P14 depends upon the type and composition of the waste materials. The recipes take into consideration the moisture of the material, the mercury content of the material, and the density of the material within a vessel. Example recipes are Neon, UV, Phosphor Powder, Regulator Aluminum, Regulator Cast Steel, and Soil. Historical cycles are also considered when determining the retort cycle time. Typical cycle times range from a few hours to a week.

A prime example is dental amalgam; it does not have a specific recipe of its own, but because the material is similar in nature to soil it is cooked using the soil recipe with a few adjustments. The material tends to be very moist and high in mercury content. As such the material is loaded into canisters about 2 to 3-inches thick and then loaded into the kettles. Because of the moisture content the material is dehydrated anywhere from 24 to 48 hours at 400°F, and then the oven is programmed for a five-day cook at 900°F.

Sulfur-impregnated carbon adsorber (C11) collects the mercury vapor not trapped by the condensing system. The air emissions then discharge through the process stack S15 to the stack S14 (Stack S14 Inlet) equipped with sulfur-impregnated carbon adsorber (C10).

Available equipment details regarding the equipment for P14 is contained in Appendix M.

The natural gas combustion by-products from P14 discharge through flue stack S17. Prior to discharge from S17 the combustion by-products travels through an air emission control system located on the mezzanine west of the building (see Figure 4-2 of the MPAP included in Appendix EE). This system is comprised of an air-to-air heat exchanger, followed by a pre-filter and activated carbon filter unit. The flue stack blower located on the oven pushes air through the system and the blower on stack S17 pulls air through the system. The blowers will be balanced to maintain a negative pressure inside the emission control system. The air-to-air heat exchanger uses a blower to draw air through a pre-filter and then push that air through separate channels within the heat exchanger. The heated non-contact air from the heat exchanger is discharged to the atmosphere. The pre-filter boxes are sized to accept a standard 24x24x2-inch filter or equivalent. The activated carbon filter will be comprised of two Calgon HFVS 3000 filters or equivalent and are identified as control device C17. Variable speed direct drive blowers are installed after C17 and prior to the heat exchanger to achieve required flow rates. Filtered exhaust gases are discharged through stack S17 which has an unobstructed vertical discharge with a height of 25 feet above ground surface. The exhaust stack for the non-contact heat exchanger air is located at a height where the heat from the exchanger will not present a safety hazard or adversely impact the building. Pressure, vacuum, and temperature sensors are installed on the S17 flue stack control stream and connected to control equipment capable of shutting off the oven burner if key operating parameters are exceeded. Sensors are tied into PLC controls for P14. The control equipment on the flue gas stack will operate at all times that the oven is in use.

4.5.1.4 Retort Room Fugitive Emissions (F99)

The room has an isolated ventilation system, which collects and controls the fugitive mercury emissions generated during opening containers, de-packing containers, and sorting debris and devices prior to retorting in the retort room (F99). These emissions are captured by a 5,000-cubic feet per minute blower which pulls the air emission through a pre-filter, a high efficiency particulate air (HEPA) filter, and the 7,700 pounds of sulfur-impregnated carbon contained in the Waterlink Barnebey Sutcliffe HECA-500-24/CB11 Carbon Absorber or equivalent. Appendix M presents the ventilation system design inside the retort room and a drawing of the Waterlink Barnebey Sutcliffe HECA-500-24/CB11 Carbon Absorber. The carbon absorber is identified as C10 and is presented on Figure 4-2 of the MPAP included in Appendix EE. C10 is connected to the retort room through sheet metal ducting, which penetrates through and is boxed into the northern outside wall of the room. The point of connection is defined as "Stack S14 Inlet".

4.5.2 Operation of Units (NR 670.023(1)(b))

The above sources and control devices are covered under the WDNR Bureau of Air Management Operation Permit No: 246076050-S02 issued March 25, 2019, and Wisconsin Regulations NR 439.11. The TSDF's MPAP has established inspection, maintenance, and corrective action procedures necessary to ensure the air pollution control devices are operating properly. The control devices and the MPAP prevent release to the atmosphere (NR 670.014(2)(h)6.). As presented in Appendix EE, Attachment C of the MPAP outlines the potential malfunction cause and detection review and then provides the response activity. Attachment C considers pressure, temperature, vacuum, and mercury concentrations.

Under the March 25, 2019, WDNR Bureau of Air Management Operation Permit No: 246076050-S02, the air emissions from stack S14 (Stack S14 Inlet) are monitored daily with a portable mercury vapor monitor, such as the Arizona Instruments Jerome 431X portable mercury monitoring unit or equivalent. The mercury vapor monitor sampling tube is inserted into an opening to the stack and the internal sampling pump on the meter draws a sample which passes over or through a detector and the unit calculates a concentration of mercury in the air stream. The result is displayed on the unit and the result is recorded on the air monitoring logs maintained by VESTS. VESTS also has a Mercury Instruments VM3000 meter for back-up monitoring. The Jerome 431X and VM3000 units are sent annually for certification and calibration. These records are available for review at VESTS.

The pressure drop across the Waterlink Barnebey Sutcliffe HECA-500-24/CB11 Carbon Absorber or equivalent is measured once every 8 hour of source operation or once per day by reading the manihelic gauge. The reading is recorded on air monitoring logs maintained by VESTS.

4.5.2.1 Retort Vacuum Monitoring (NR 670.023(1)(b))

As part of the Class 1 Modification, dated August 17, 2018, VESTS installed additional vacuum monitoring sensors for each retort oven (P10, P11, P14). These sensors are connected to each of the drums or vessels inside the ovens increasing the number of monitoring points for each oven. The types of monitoring points and type of sensors are provided on Figure 4-2 of the MPAP included in Appendix EE. As presented in Appendix EE, Attachment C of the MPAP outlines the potential malfunction cause and detection review and then provides the response activity.

The materials of construction for the vacuum piping inside the oven chamber was converted from flexible vacuum piping to hard piping in the work chamber, which is dedicated to each vessel. The piping articulates so that it will function with all vacuum vessel configurations.

Separate vacuum measurement piping was installed to each vessel container lid. The piping leads to dedicated National Institute of Standards and Technology (NIST) traceable calibrated vacuum transducers with a measurement range of 0 to 32-inches mercury. The transducers send a signal to a PLC outside of the retort room. The PLC receives the signal and converts it to a vacuum measurement that is used by the PLC for the control of the ovens and the vacuum blower. The operator interface is located on the main control panel for the WOC. Operation of the interface is password protected so that only trained staff is able to operate the equipment.

The control panel display shows the vacuum reading for each active vessel. The display information is used to determine vacuum vessel and connection integrity prior to process initiation. If vacuum levels are unacceptable, a notification appears on the display, an audible alarm sounds, and a notification is sent to the appropriate supervisory personnel. The gas fired burner will not operate if any vessel is not under vacuum.

The vacuum in each vessel will be monitored throughout the processing run. If any vessel is not under vacuum, the gas fired burner will shut off and the inlet air and exhaust air dampers will close. The vacuum pump and air handling equipment will continue to operate. The control equipment on the flue stack exhaust will also continue to operate.

A preventive maintenance (PM) plan has been established for the vacuum system, including the following items:

- ◆ Visual inspection for the vacuum piping, including articulating joints, connections and clamps, associated with each active retort vessel and drum prior to start-up of the oven. The inspection evaluates the structure integrity of the items. The inspections are documented on a retort batch worksheet.
- ◆ Annual calibration vacuum sensor by outside vendor.

4.5.2.2 Flue Gas Control and Monitoring (NR 670.023(1)(b))

The flue gas exhaust from each oven, P11, P12, and P14 is ducted to emission control equipment prior to being exhausted through the flue gas stacks S12, S13, and S17 respectively. The emission control system for each oven includes an air-to-air heat exchanger and activated carbon with pre-filter. The maximum temperature for exhaust gases at the pre-filter is 150°F. This temperature is based on the maximum operating temperature of the pre-filter and activated carbon. During the cooling of the exhaust gases, water will condense and the heat exchanger is equipped with a trap for collecting and draining the condensed water.

The heat exchangers are designed to achieve this temperature under normal operating conditions; however, as a contingency, the discharge from each heat exchanger (inlet to pre-filter) is equipped with an air inlet and PLC controlled dampers to blend ambient air as necessary to reduce the temperature of the air to the pre-filter to <150°F. The blended air passes through a 2-inch particulate pre-filter. From the pre-filter the air is ducted to an activated carbon adsorber. From the adsorber it is ducted to a blower and discharged through a stack to ambient. The stack has an unobstructed vertical discharge with a discharge point of 25 feet above ground surface.

Blowers are equipped with variable frequency direct (VFD) drive motors. The VFD is connected to and controlled by the PLC. Sensors that need to be tied into the PLC are listed in the MPAP included on the Air Monitoring Log, with the number referencing Figure 4-2 of the MPAP included in Appendix EE. The purpose of the sensors is to ensure that there is no back pressure on the oven and to verify the proper operation of each component in the emission control system.

The types of monitoring points and locations of pressure, temperature, humidity, and vacuum sensors are provided on Figure 4-2 of the MPAP included in Appendix EE. As presented in Appendix EE, Attachment C of the MPAP outlines the potential malfunction cause and detection

review and then provides the response activity. Attachment C considers pressure, temperature, vacuum, and mercury concentrations of the equipment, process system, and flue gas system.

4.5.2.3 Annual Air Emissions Inventory Summary Report (NR 670.023(1)(b))

Annually, VESTS submits to the WDNR an Air Emissions Inventory Summary Report and a summary of air monitoring logs as a component of the Annual Compliance Certification summarizing and presenting the overall mercury emissions.

4.5.2.4 Post Retort Waste Analysis (NR 670.012(1)(b))

The Waste Analysis Plan (FPOR Section 6) describes the Post Retort Waste Analysis.

4.5.3 Preventing Releases to Groundwater and Subsurface Environment (NR 664.0601(1)(a)-(i))

As described in Section 4.5.1, the retort operations are located inside the TSDF building. The concrete floor prevents incidental releases of mercury from migrating to the subsurface environment. The indoor location of the mercury retort operations also results in a low potential for impacts to domestic animals, wildlife, crops, and vegetation. The Contingency Plan included as Section 8 of the FPOR describes the spill response and control measure for elemental mercury releases.

The hydrologic, geologic, and hydrogeologic characteristics and setting of the retort operation location is the same as the overall TSDF and is provided in the Environmental Assessment included in Appendix MM of the FPOR. The existing groundwater quality of the TSDF is presented in the Environmental Assessment included in Appendix MM of the FPOR.

The land use in the area of the TSDF is zoned industrial and light manufacturing. Agricultural areas are located approximately 2,000 feet southwest and 2,500 feet northeast of the facility. Based on these distances and the retort operation being located indoors, the potential for migration of mercury into the root zone of food chain crops and other vegetation is low. Refer to Drawing D-7, Zoning District Map, for the most current Port Washington, WI zoning map.

The TSDF takes various measures to manage the health risks caused by employee exposure to mercury. Section 4.1.4 describes the PPE used by employees in the retort operations. The air quality inside the retort room is monitored for mercury daily using a direct reading mercury instrument, such as a Jerome 431X. The employees are also trained in Job Safety Analysis (JSA) and retort procedures to reduce the health risks. Employees working in the retort operations participate in a medical monitoring program, which includes pre-employment screening, annual screening, and post-employment screening.

The control and monitoring of the fugitive emission from inside the retort room and unit sources, as described Section 4.5.2, also reduces the potential for health risks.

4.5.4 Preventing Releases to Surface Water, Wetlands, or Soil Surface (NR 664.0601(2)(a)-(k))

As described in Section 4.5.1, the retort operations are located inside the TSDF building. The concrete floor prevents incidental releases of mercury from migrating to surface waters, wetlands, and the soil surface. The indoor location of the mercury retort operations also results

in a low potential for impacts to domestic animals, wildlife, crops, and vegetation. The Contingency Plan included as Section 8 of the FPOR describes the spill response and control measure for elemental mercury releases.

The hydrologic and climatological characteristics, data, and setting of the retort operation location is the same as the overall TSDF and is provided in the Environmental Assessment included in Section 6 of the FPOR. The existing quality of surface water and surface soils is described in the Environmental Assessment included in Section 6 of the FPOR.

The land use in the area of the TSDF is zoned industrial and light manufacturing. Agricultural areas are located approximately 2,000 feet southwest and 2,500 feet northeast of the facility. Based on these distances and the retort operation being located indoors, the potential for migration of mercury into the root zone of food chain crops and other vegetation is low. Refer to Drawing D-7, Zoning District Map, for the most current Port Washington, WI zoning map.

The TSDF takes various measures to manage the health risks caused by employee exposure to mercury. Section 4.1.4 describes the PPE used by employees in the retort operations. The air quality inside the retort room is monitored for mercury daily using a direct reading mercury instrument, such as a Jerome 431X. The employees are also trained in JSA and retort procedures to reduce the health risks. Employees working in the retort operations participate in a medical monitoring program, which include pre-employment screen, annual screening, and post-employment screening.

The control and monitoring of the fugitive emission from inside the retort room and unit sources, as described Section 4.5.2, also reduces the potential for health risks.

4.5.5 Preventing Releases to Air (NR 664.0601(3)(a)-(g))

Air emissions from the retort sources as well as the overall retort operations are controlled by pressure, vacuum, temperature, and humidity sensors are installed throughout the process and connected to a PLC. The use of carbon adsorbers controls the mercury emission of processes. These sources and associated control devices are covered under the March 25, 2019, issued WDNR Bureau of Air Management Operation Permit No: 246076050-S02 and Wisconsin Regulations NR 439.11. A complete copy of the March 25, 2019, WDNR Bureau of Air Management Operation Permit No: 246076050-S02 is located in Appendix DD. Figure 4-2 of the MPAP included in Appendix EE provides the configuration of the air pollution control devices. The TSDF's MPAP establishes inspection, maintenance, and corrective action procedures necessary to ensure the air pollution control devices are operating properly. The control devices and the MPAP prevent releases to the atmosphere (NR 670.014(2)(h)6.). The MPAP is presented in Appendix EE. Attachment C of the MPAP outlines the potential malfunction cause and detection review and then provides the response activity. Attachment C considers pressure, temperature, vacuum, and mercury concentrations.

Under the March 25, 2019, WDNR Bureau of Air Management Operation Permit No: 246076050-S02 the air emissions from stack S14 (Stack S14 Air Handler Exhaust) is monitored once per day with portable direct reading mercury vapor analyzer such as an Arizona Instruments Jerome 431X, or equivalent. The mercury vapor analyzer sampling tube is inserted into an opening to the stack and the internal sampling pump on the meter draws a sample which passes over or through a detector and the unit calculates a concentration of mercury in the air stream. The

result is displayed on the unit and the result is recorded on the air monitoring logs maintained by VESTS. The TSDF also has a Mercury Instruments VM3000 meter or equivalent for back-up monitoring. The Jerome 431X and VM3000 units are sent annually for certification and calibration. These records are available for review at the TSDF.

The pressure drop across the Waterlink Barnebey Sutcliffe HECA-500-24/CB11 Carbon Absorber is measured once for every eight hours of source operation or once per day by reading the magnihelic gauge. The reading is recorded on air monitoring logs maintained by VESTS.

Annually, VESTS submits to the WDNR an Air Emissions Inventory Summary Report and Annual Compliance Certification summarizing and presenting the overall mercury emissions.

The climatological characteristics, data, and setting of the retort operation location are the same as the overall TSDF and is provided in the Environmental Assessment included in Appendix MM of the FPOR.

Because the air emissions from the mercury retort operations are controlled and monitored in accordance with a WDNR air emission operating permit, there is a low potential for impacts to domestic animals, wildlife, crops, and vegetation.

The TSDF takes various measures to manage the health risks caused by employee exposure to mercury. Section 4.1.4 describes the PPE used by employees in the retort operations. The air quality inside the retort room is monitored for mercury daily using a portable direct reading mercury instrument, such as a Jerome 431X or equivalent. The employees are also trained in JSA and retort procedures to reduce the health risks. Employees working in the retort operations participate in a medical monitoring program, which include pre-employment screening, annual screening, and post-employment screening.

The control and monitoring of the fugitive emission from inside the retort room and unit sources, as described above, also reduces the potential for health risks.

4.5.5.1 Control of Flue Gas Exhaust (NR 664.0601(3)(a)-(g))

On March 12, 2018, VESTS submitted to the WDNR Bureau of Air Management a proposal to install additional air pollution control equipment on the three flue stacks associated with P10, P11, and P14. The proposal also included the monitoring of vacuum conditions leaving the vessels inside the retorts and connected to the process controls. The March 25, 2019, WDNR Bureau of Air Management Operation Permit No: 246076050-S02 identifies flue stacks as stacks S15, S16, and S17. The stacks exhaust combustion gases from three natural gas heated retort processes. Although the exhaust gases do not contain mercury under normal operating conditions, VESTS proposed installing activated carbon filters for the control of mercury vapors if an equipment failure were to occur. The control equipment also includes air-to-air heat exchangers to regulate the operating temperature that enters the activated carbon filters.

As presented in Appendix EE, Attachment C of the MPAP outlines the potential malfunction cause and detection review and then provides the response activity. Attachment C considers pressure, temperature, vacuum, and mercury concentrations.

4.5.5.2 Retort Vacuum Monitoring (NR 664.0601(3)(a)-(g))

As part of the Class I Modification submitted on August 17, 2018, VESTS installed vacuum monitoring sensors for each retort oven (P10, P11, P14). These sensors are connected to the drums or vessels inside the ovens increasing the number of monitoring point for each oven. The types of monitoring points and type of sensors are provided on Figure 4-2 of the MPAP included in Appendix EE. As presented in Appendix EE, Attachment C of the MPAP outlines the potential malfunction cause and detection review and then provides the response activity.

The materials of construction for the vacuum piping inside the oven chamber has been converted from flexible vacuum piping to hard piping in the work chamber, which is dedicated to each vessel. The piping articulates so that it will function with all vacuum vessel configurations.

Separate vacuum measurement piping was installed to each vessel container lid. The piping leads to dedicated NIST traceable calibrated vacuum transducers that measure in the range of 0 to 32-inches mercury. The transducers send a signal to a PLC outside of the retort room. The PLC receives the signal and converts it to a vacuum measurement. The operator interface is located on the main control panel for the WOC. Operation of the interface is password protected so that only trained staff is able to operate the equipment.

The control panel display shows each active vessel vacuum reading prior to start. The display information is used to determine vacuum vessel and connection integrity prior to process initiation. If vacuum levels are unacceptable, a notification appears on the display, and audible alarm sounds, and a notification is sent to the appropriate personnel. The gas fired burner will not operate if the vacuum is below this level.

The vacuum in each vessel is monitored throughout the processing run. If any vessel is not under vacuum the gas fired burner will shut off and the inlet air and exhaust air dampers close. The vacuum pump and air handling equipment will continue to operate. The control equipment on the flue stack exhaust will also continue to operate.

A PM plan has been established for the vacuum system, including the following items:

- ◆ Visual inspection for the vacuum piping connection and clamps, and each active vessel prior to start-up. The inspection evaluates the structure integrity of the items. The inspections are documented on a retort batch worksheet.
- ◆ Annual calibration vacuum sensor by outside vendor.

4.5.5.3 Flue Gas Control Monitoring (NR 664.0601(3)(a)-(g))

The flue gas exhaust from each oven, P10, P11, P14 is ducted to emission control equipment prior to being exhausted through the flue gas stacks S12, S13, and S17 respectively. The emission control system for each oven includes an air-to-air heat exchanger and activated carbon with pre-filter. Under the March 25, 2019, WDNR Bureau of Air Management Operation Permit No: 246076050-S02, the maximum temperature within each carbon adsorber (C15, C16, C17) will not exceed 150°F. The temperature is measured every day of operation. This temperature is based on the maximum operating temperature of the pre-filter and activated carbon. During the cooling of the exhaust gases, water will condense and the heat exchanger is equipped with a trap for collecting and draining the condensed water.

The heat exchangers are designed to achieve this temperature under normal operating conditions; however, as a contingency, the discharge from each exchanger (inlet to pre-filter) is equipped with an air inlet and PLC controlled dampers to blend ambient air as necessary to reduce the temperature of the air to the pre-filter to <150°F. The blended air then passes through a two-inch particulate pre-filter. From the pre-filter the air is ducted to an activated carbon adsorber. From the adsorber it is ducted to a blower and discharged through a stack to ambient. The stack has an unobstructed vertical discharge with a discharge point of 25 feet above ground surface.

As shown on Figure 4-2 of the MPAP included in Appendix EE, blowers are equipped with VFD drive motors. The VFD is connected to and controlled by the PLC. Sensors that are tied into the PLC are listed in the MPAP with number referencing. The purpose of the sensors is to ensure that there is no back pressure on the oven and to verify the proper operation of each component in the emission control system.

The types of monitoring points and type of sensors are provided on Figure 4-2 of the MPAP included in Appendix EE. As presented in Appendix EE, Attachment C of the MPAP outlines the potential malfunction cause and detection review and then provides the response activity.

4.5.6 Potential Pathways of Exposure (NR 670.023(3))

VESTS has evaluated the mercury recovery/retort operations to determine potential pathways of exposure of humans and environmental receptors to mercury. The potential pathway is through mercury air emission. However, the processing units are associated with various control measures and subject to various monitoring requirements, as described in Section 4.5. The air emissions are regulated by the WDNR under the March 25, 2019, WDNR Bureau of Air Management Operation Permit No: 246076050-S02. The WDNR air permitting section has used air emission modeling to establish the emission limits based on risk to humans and the environment. VESTS conducts mercury monitoring once for every eight hours of source operation or once per day for Stacks S12, S13, and S17. VESTS also conducts mercury monitoring for Stack S14 once per day. VESTS also implements inspections in accordance with the MPAP and submits annual air emission inventory reports to the WDNR.

4.5.7 Monitoring, Inspecting, and Reporting of Units' Activities (NR 664.0602)

4.5.7.1 Air Emission Monitoring (NR 670.014(2)(h)6.)

Under the March 25, 2019, WDNR Bureau of Air Management Operation Permit No: 246076050-S02, the mercury air emissions from stack S14 (Stack S14 Air Handler Exhaust) is monitored once per day. In addition stacks S12, S13, and S17 are monitored once for every eight hours of source operation or once per day with a portable direct reading mercury vapor monitor, such as an Arizona Instruments Jerome 431X or equivalent. The mercury vapor monitor sampling tube is inserted into an opening to the stance and the internal sampling pump on the meter draws a sample which passes over or through a detector and the unit calculates a concentration of mercury in the air stream. The result is displayed on the unit and the result is recorded on the air monitoring logs maintained by VESTS. VESTS also has a Mercury Instruments VM3000 meter for bac-up monitoring. The Jerome 431X and VM3000 units are sent annually for certification and calibration. These records are available for review at the TSDF.

The pressure drop across the Waterlink Barnebey Sutcliffe HECA-500-24/C11 Carbon Absorber (C10) is measured once for every eight hours of source operation or once per day, whichever yields the greater number of measurements, by reading the magnihelic gauge. The reading is recorded on air monitoring logs maintained by VESTS.

Annually, VESTS submits to the WDNR an Air Emissions Inventory Summary Report and Annual Compliance Certification summarizing and presenting the overall mercury emissions.

4.5.7.1.1 Retort Vacuum Monitoring (NR 670.014(2)(h)6.)

As part of the Class 1 Modification submitted on August 17, 2018, VESTS installed vacuum monitoring sensors for each retort oven (P10, P11, P14). These sensors are connected to the drums or vessels inside the ovens increasing the number of monitoring points for each oven. The types of monitoring points and type of sensors are provided on Figure 4-2 of the MPAP included in Appendix EE. As presented in Appendix EE, Attachment C of the MPAP outlines the potential malfunction cause and detection review and then provides the response activity.

The materials of construction for the vacuum piping inside the oven chamber have been converted from flexible vacuum piping to hard piping in the work chamber, which is dedicated to each vessel. The piping articulates so that it will function with all vacuum vessel configurations.

Separate vacuum measurement piping was installed to each vessel container lid. The piping leads to dedicated NIST traceable calibrated vacuum transducers that read in a range of 0 to 32-inches mercury. The transducers send a signal to a PLC outside of the retort room. The PLC receives the signal and converts it to a vacuum measurement. The operator interface is located on the main control panel for the WOC. Operation of the interface is password protected so that only trained staff is able to operate the equipment.

The control panel display shows each active vessel vacuum reading prior to start. The display information is used to determine vacuum vessel and connection integrity prior to process initiation. If vacuum levels are unacceptable, a notification appears on the display, and audible alarm sounds, and a notification is sent to the appropriate personnel. The gas fired burner will not operate if the vacuum is below this level.

The vacuum in each vessel is monitored throughout the processing run. If any vessel is not under vacuum the gas fired burner shuts off and the inlet air and exhaust air dampers close. The vacuum pump and air handling equipment will continue to operate. The control equipment on the flue stack exhaust will also continue to operate.

A PM plan has been established for the vacuum system, including the following items:

- ◆ Visual inspection for the vacuum piping connection and clamps, and each active vessel prior to start-up. The inspection evaluates the structure integrity of the items. The inspections are documented on a retort worksheet.
- ◆ Annual calibration vacuum sensor by outside vendor.

4.5.7.1.2 Flue Gas Control Monitoring (NR 670.014(2)(h)6.)

The flue gas exhaust from each oven, P10, P11, and P14 is ducted to emission control equipment prior to being exhausted through the flue gas stacks S12, S13 and S17 respectively. The emission control system for each oven includes an air-to-air heat exchanger and activated carbon with pre-filter. Under the March 25, 2019, WDNR Bureau of Air Management Operation Permit No: 246076050-S02, the maximum temperature within each carbon adsorber (C15, C16, C17) will not exceed 150°F. The temperature is measured every day of operation. This temperature is based on the maximum operating temperature of the pre-filter and activated carbon. During the cooling of the exhaust gases, water condenses and the heat exchanger is equipped with a trap for collecting and draining the condensed water.

The heat exchangers are designed to achieve this temperature under normal operating conditions; however, as a contingency, the discharge from each exchanger (inlet to pre-filter) is equipped with an air inlet and PLC controlled dampers to blend ambient air as necessary to reduce the temperature of the air inside the carbon adsorber below 150°F. The blended air passes through a 2-inch particulate pre-filter. From the pre-filter the air is ducted to an activated carbon adsorber. From the adsorber it is ducted to a blower and discharged through a stack to ambient. The stack has unobstructed vertical discharge with a discharge point of 25 feet above ground surface.

The types of monitoring points and type of sensors are provided on Figure 4-2 of the MPAP included in Appendix EE. As presented in Appendix EE, Attachment C of the MPAP outlines the potential malfunction cause and detection review and then provides the response activity.

As shown on Figure 4-2 of the MPAP included in Appendix EE, blowers are equipped with VFD drive motors. The VFD is connected to and controlled by the PLC. Sensors are tied into the PLC are listed in the MPAP with number referencing. The PLC is equipped with data logging capabilities and the measurements generated by each of the sensors.

Each flue stack, S12, S13, and S17 is monitored using a portable direct read mercury vapor meter, such as a Jerome 431-X mercury vapor meter or equivalent. This monitoring is performed once for every eight hours of source operation or once per day, whichever yields the greater number of measurements. The purpose of this monitoring is to demonstrate compliance with the mercury air emission limits established as a component of the facility air operating permit.

4.5.7.2 Post Retort Performance Sampling (NR 670.023(4)):

The Waste Analysis Plan (FPOR Section 6) describes the Post Retort Performance Sampling.

4.5.7.3 Preventive Maintenance Program (NR 670.023(1)(b)):

Routine preventive maintenance (PM) is performed in accordance with manufacturer's recommendation on the mercury retort system equipment. The PM schedule for each piece of equipment is established in the facility's computerized maintenance management system. The facility is currently using COGZ, which is a commercially available computerized maintenance tracking system. The PM activities are then documented in the system. Any necessary repairs are documented in the COGZ system as well. The MPAP in Appendix EE includes specific information on the maintenance activities for the system.

4.5.7.4 Malfunction Prevention and Abatement Plan

As presented in Appendix EE, a MPAP has been established and implemented by the TSDF for the inspection, maintenance, and, if necessary, employing corrective action procedures to ensure that all air pollution control devices are operating properly within the retort operations. Under the MPAP, inspections are completed, documented, and any corrective action made are also documented. The inspections conducted under the MPAP, along with the PM program described above will conform with the general inspection requirements under NR 664.0015.

4.5.7.5 Recordkeeping and Reporting

As discussed in the Waste Analysis Plan included in Section 6 of the FPOR, each container of waste entering the TSDF is assigned an inventory number. The inventory is maintained electronically and documents the wastes processed through the retort operations. This information is used to comply with the annual reporting requirements in NR 664.0075.

Un-manifested waste will be identified during the receiving activities. The identification and reporting of un-manifested waste will be conducted in accordance with the Waste Analysis Plan included in Section 6 of the FPOR and NR 664.0075.

Additional reports relative to the retort operations will be submitted to the WDNR if release, fires, or an explosion has occurred or a threat exists in accordance with NR 664.0056(9) and the Contingency Plan in Section 8 of the FPOR; the unit under goes closure in accordance with NR 664.0115 and the Closure Plan in Section 9 of the FPOR; or experiences a release under the Subchapter F of NR 664, requirement for Solid Waste Management Units (SWMUs).

As outlined in Section 2 of the FPOR, the mercury retort operations were identified in the 2003 RFA activities as SWMU #5. However, corrective actions associated with SWMU #5 have not been required by the WDNR or implemented in accordance with NR 664.0101.

4.5.8 Assessment of Compliance with Environmental Performance Standards (NR 670.023(2) and NR 664.0601)

VESTS has reviewed the Environmental Performance Standards outlined in NR 664.0601 and has determined the mercury recovery/retort operations miscellaneous units are in compliance with the standards. The units are covered under the March 25, 2019, issued WDNR Bureau of Air Management Operation Permit No: 246076050-S02, which regulates the mercury emissions to the air. The WDNR air permitting section has used air emission modeling to establish the emission limits. The TSDF conducts daily monitoring of Stacks S12, S13, S14, and S17, implements inspections in accordance with the MPAP, and submits annual air emission inventory reports to the WDNR.

VESTS has also implemented PPE, industrial hygiene monitoring, and medical surveillance programs to protect and monitor employee exposure to mercury.

As discussed in Section 2 of the FPOR, the RFA Report also identified the retort operations as SWMU #5. The RFA Report concluded "the retort operation may have some potential for accumulation of contaminants from fallout to the roof then to the soil at the base of the roof drains." On October 19, 2004, VESTS submitted to the WDNR the RFI Report (Appendix J). The RFI results for SWMU #5, and SWMU#4, and AOC#1, indicated near surface soil impacts (0 to

1.5 feet bgs) of mercury (0.23 to 2.4 mg/kg) above the ground water protection RCL of 0.21 mg/kg. The mercury concentrations in soils samples for below 2 feet bgs were below the RCL. This area of soil impacts needs to be remediated.

The RFI Report also presents groundwater monitoring data from a well located hydraulically sidegradient (MW-1). The data indicates no detectable concentration of mercury ($<0.11 \mu\text{g/L}$) in the groundwater. Based on the information, there appears to be a low potential for any groundwater impacts associated with SWMU #5.

The removal of R1 and R2 and the installation of R5 are not anticipated to impact the soil and groundwater monitoring data associated with SWMU #5. These activities will be completed inside the retort room and the air emissions are controlled by S14 (Stack S14 Inlet) equipped with sulfur-impregnated carbon adsorber (C10).

4.6 Other Regulated Waste Operations

4.6.1 Fluorescent Light Recycling

VESTS operates three fluorescent lamp recycling units at the facility. The recycling operation recovers the fluorescent lamp components, including glass, aluminum, electronic bases from compact fluorescent lamps (CFL) and mercury bearing phosphor powder. The three lamp recycling machines are located in the northern section of the building, as depicted on Drawing D-3, Facility Layout.

The waste streams are generated as by-products from the fluorescent light recycling operations including:

- ◆ Lamp glass
- ◆ Lamp aluminum end-caps
- ◆ CFL electronic bases
- ◆ Pre-retort phosphor powder

One sample per month is collected from both the lamp glass and lamp aluminum end-caps and tested for TCLP mercury and total mercury concentrations. The CFL bases are tested annually for TCLP mercury and total mercury. The pre-retort phosphor powder is accumulated into 55-gallon drums and then retorted on site.

Mercury contaminated carbon, pre-filters, and HEPA filters are accumulated in drums and then processed through the retort ovens to recover the captured mercury.

The lamp processing sources and control devices are covered under a WDNR Pollution Control Operating Permit 246076050-S02 and Wisconsin Regulations NR 439.11.

4.6.2 Nonhazardous Solid Waste Storage and Processing

VESTS conducts non-hazardous solid waste storage and processing at the facility. Operations include re-containerization, phase separation, and solidification in drums. The facility is permitted to conduct solid waste processing in accordance with the Solid Waste Facility Processing License (Appendix E).

4.6.3 Used Oil Management

VESTS accepts used oils (classified according to NR 590, Wis. Adm. Code, requirements) at the facility for storage and transfer. The used oil is stored in 55-gallon drums on skids equipped with secondary containment. The used oil may be pumped to a tanker for transport and recycling at an off-site facility.

4.6.4 Household Hazardous Waste

On August 18, 1999, the TSDF submitted a Plan of Operation for the Household Hazardous Waste (HHW Plan of Operation) Permanent Collection Facility to the WDNR. VESTS operates the Household Hazardous Waste Permanent Collection Facility in accordance with its HHW Plan of Operation. The HHW Plan of Operation is written in accordance with the requirements of NR 666 Subchapter HH and is available on request. The location of the HHW Permanent Collection area is depicted on Drawing D-3, Facility Layout.

The majority of the HHW are packaged in their original containers into DOT-approved shipping containers. In some instances, HHWs are consolidated or commingled into other hazardous waste streams, as appropriate. This consolidation or commingling occurs in the storage pods. The resulting container is stored in the permitted storage pods. Details of the storage procedure are outlined in the HHW Plan of Operation.

4.6.5 Universal Waste

In addition to operating as a destination facility for universal waste mercury containing equipment and fluorescent lamps, the TSDF operates as a handler of other universal wastes defined in NR 673 or WDNR Publication WA 356 (Assessment Guide for Electronic Wastes, Universal Waste and Used Oil Handlers). In accordance with NR 673.09(2), a facility that only accumulates a specific category of universal waste is not a destination facility for the purposes of that category of universal wastes. The categories of universal wastes accumulated for off-site management includes universal waste HID lamps, universal waste batteries, and used antifreeze. To date the facility has not managed any pesticides as a universal waste; however, the facility may choose to do so in the future on a project-specific basis.

Universal waste HID lamps are received in various size, fiberboard, plastic, or metal containers. Universal waste batteries are received in fiberboard, plastic, or metal containers or on pallets as authorized by the DOT. Used antifreeze is received in metal or plastic drums or is generated on site and accumulated in plastic drums. The facility also manages as universal waste HID lamps and batteries that are separated from the universal wastes being recycled on site. The on-site accumulation of universal waste is conducted in accordance with NR 673.50 including, accumulation time limits, labeling, employee training, tracking of the material while on site and off-site shipments. Any releases of a universal waste would be subject to the TSDF contingency plan implementation provisions.

4.6.6 Ten-Day Waste Activities

VESTS may have shipments of hazardous wastes temporarily stored during transportation and before receipt at the facility designated on the manifest. The waste will not be stored at the facility for more than 10 calendar days. Containers holding hazardous wastes shall be stored in transport vehicles. Areas where transport vehicles holding wastes are parked and waste

containers are transferred between vehicles should be sufficiently impervious. The facility maintains waste tracking records to verify compliance and in particular, compliance with the in-transit storage timeframes. A daily shipment log, or similar waste tracking records, must be identified for each waste.

4.6.7 Personal Protective Equipment Management

PPE are used throughout the facility:

- ◆ Retort Room: Tyvek coveralls, powered air purifying respirator loose-fitting hood, safety glasses, steel-toe boots, nitrile gloves, and leather gloves.
- ◆ Hazardous Waste PPE: Tyvek coveralls, Nitrile gloves, safety glasses, steel-toe boots, and a full-face respirator if needed.
- ◆ Non-Hazardous waste PPE: Tyvek coveralls, nitrile gloves, safety glasses, and steel-toed boots.

Any mercury contaminated PPE is put into a cubic yard box in the retort rooms and managed there. Once the container is full, it is shipped out as hazardous waste. Hazardous waste PPE and non-hazardous PPE are placed into a PPE debris drum in Storage Room 1 and managed as a satellite accumulation area. Once full, it is shipped out as hazardous waste.

4.6.8 Cathode Ray Tubes Management

Cathode ray tubes will be offloaded, received, and sent to an e-waste facility for management and disposal.

4.6.9 RCRA Empty Drum Management

RCRA empty drums are stored on storage trailers in the parking lot and are reused in the operations or scrapped.

4.6.10 Waste Generation at the Facility

Storage Room 1 has a satellite accumulation area for household HHW consolidation. Storage Room 1 has a satellite accumulation area for PPE debris. The hazardous waste generated on site is related to the retort processing (PPE, by-products such as condensate water).

4.7 Support Operations

The facility contains a number of support operations or facilities, including the office building. Refer to Drawing D-3, Facility Layout.

4.8 Personnel Training (NR 664.0016 and NR 670.014(2)(1))

Training of personnel is completed to instruct and refresh employees on performing operations that maintain facility compliance. The program is directed by the Operations Manager and implemented by the Environmental, Health & Safety (EH&S) Manager and includes training on hazardous waste handling procedures, MPAP, Contingency Plan implementation, and emergency response. The training program is designed to ensure that facility personnel are able

to respond effectively to emergencies through reviewing the Contingency Plan, the emergency procedures, the emergency equipment, and emergency systems. Additional details on employee training are included in Section 13 of the FPOR.

4.9 Waste Minimization

A Waste Minimization Plan has been developed by VESTS for the TSDF. The Plan is maintained as part of the operating record for the facility. A copy of the Waste Minimization Plan is included in Appendix R.

4.10 Air Emission Management (NR 670.027, NR 670.014(2)(h)6.)

NR 664 Subpart CC was written to control organic air emissions from tanks, surface impoundments, and containers at hazardous waste TSDFs. As such, it applies to hazardous wastes with a volatile organic (VO) concentration of greater than 500 parts per million by weight (ppmw).

4.10.1 Identification of Container Area (NR 670.027(1)(b))

Subpart CC rules apply to those materials that

- a. Are hazardous wastes, and
- b. Have a VO concentration of greater than 500 ppmw.

The TSDF is permitted to store hazardous wastes in containers in Storage Rooms 1, 2, and 3. The TSDF has no on-site hazardous waste storage tanks or surface impoundments. The TSDF is permitted to perform physical manipulation of wastes such as bulking, consolidation, and re-containerization, however, no actual disposal occurs on site.

The Subpart CC rules apply to hazardous wastes received at the TSDF. Since the TSDF only manages hazardous waste in containers, the tank and surface impoundment sections of Subpart CC do not apply.

Subpart CC NR 664.1086(2) regulates containers based upon size, including:

- ◆ Containers with a design capacity of $\leq 0.1 \text{ m}^3$ (26 gallons) are exempt from these requirements regardless of organic concentration, including lab pack quantities.
- ◆ Containers with a design capacity of $> 0.1 \text{ m}^3$ and $\leq 0.46 \text{ m}^3$ (26 to 119 gallons) need to comply with Level 1 standards.
 - The majority of containers at VESTS are 55-gallon drums and are covered by the Level 1 standards.
- ◆ Containers with a design capacity of $> 0.46 \text{ m}^3$ and not "in light material service" need to comply with Level 1 standards, including totes (intermediate bulk containers), tankers (DOT specification tank), and roll-offs.

- ◆ Containers having a design capacity of >0.46 m³ and "in light material service" need to meet Level 2 standards including DOT specification intermediate bulk containers and DOT specification tankers.
- ◆ Containers that remain uncovered for waste stabilization need to meet Level 3 standards.
 - VESTS does not perform stabilization of hazardous wastes, thus this section does not apply.

The term "in light material service" means the container is used to manage a material of which the vapor pressure of one or more of the organic constituents is greater than 0.3 kPa at 20°C and the total concentration of these constituents is equal or greater than 20% by weight.

In accordance with NR 664.1086(3), in order to comply with Level 1 standards, a container must either:

1. Comply with DOT regulations, or
2. Be equipped with a cover or closure device that forms a continuous barrier such that there are no visible holes, gaps, or other open spaces, or
3. Use an organic vapor suppressing barrier such as a foam.

In accordance with NR 664.1086(4), in order to comply with Level 2 standards, a container must either:

1. Comply with DOT regulations for specification containers, or
2. Have no detectable organic emissions, or
3. Have been tested per Method 27 and certified vapor-tight within the past 12 months.

VESTS primarily utilizes containers in compliance with DOT regulations to comply with the Level 1 and Level 2 standards. The containers are stored in the licensed storage pods.

4.10.2 Certification of Compliance (NR 670.027(1)(b))

4.10.2.1 Waste Determination

As outlined in the Waste Analysis Plan in Section 6 of the FPOR, the waste generator is responsible for properly characterizing their waste, as defined in NR 661. The generator is required to certify whether or not their waste stream contains greater than 500 ppmw VO concentration. The generator will be requested to supply a copy of the laboratory report if the determination was based upon laboratory analysis.

If requested by the generator, VESTS will collect and analyze samples in accordance with the Waste Analysis Plan and "Test methods for Evaluating Solid Waste, Physical/Chemical methods," EPA Publication SW-846. If the waste is suspected of containing VO that can be quantified by running method 8260(8) or 8270(C), those analyses will be conducted. Both of these methods are approved as alternative testing methods.

If the waste is a total unknown or suspected of containing compounds that cannot be quantified by methods 8260(8) or 8270(C), alternative methods will be employed such as using generator knowledge or performing other laboratory analysis such as method 25D.

4.10.2.2 Inspection

As outlined in the Waste Analysis Plan in Section 6 of the FPOR, containers accepted at the facility are visually inspected to ensure that they are in DOT-approved containers. If any problems (visible cracks, hole, gaps, or other open spaces) are noted, the container will be repaired within 24 hours of detection. If the container cannot be adequately repaired, the waste will be placed into a DOT-approved container. Since VESTS is only allowed to store waste for up to one year, and most containers remain on site for less than three months, the annual inspection requirements of NR 664.1086(3)(d)2. and NR 664.1086(4)(d)2. do not apply. Additional details are outlined in Section 7 of the FPOR.

4.10.2.3 Container Standards

The TSDF meets NR 664.1086(3) and (4) Subpart CC container requirements by using and requiring only DOT compliant containers as allowed by both Level 1 and Level 2 standards. Further, VESTS will not place any Subpart CC covered wastes into any containers marked "NRC," non-reusable container, or "STC," single trip container. Applicable wastes will only be placed in non-bulk containers which are new or have been reconditioned per 49 CFR 173.28.

4.10.2.4 Adding to or Removing Waste from a Container

If waste is being added or removed from an applicable container, the following procedures will be used:

- ◆ A container will be filled in one continuous motion, the cover will be installed promptly upon conclusion of the filling operation.
- ◆ A container will be emptied in one continuous motion, the cover will remain on the container until the emptying process is initiated.
- ◆ If waste will be added to or removed from a container intermittently, or in batches, the cover will be promptly installed if:
 - no more material will be added or removed within 15 minutes, or
 - the person performing the operation has to leave the immediate area, whichever occurs first.
- ◆ Level 2 containers having "in light material service" will not be transferred.

4.10.2.5 Recordkeeping

VESTS does not utilize tanks, surface impoundments, closed vent systems, control devices, or Level 3 containers in its daily operations, therefore, the recordkeeping requirements of Subpart CC do not apply.

VESTS will maintain documentation associated with the determination of VO concentration. This may include copies of applicable laboratory analysis, as well as certified generator

knowledge. Generator knowledge may be based on material balances, previous test data, or analysis performed at other locations using the same process and chemical products.

Any data obtained under the general waste analysis plan (NR 664.013) and in support of NR 664.1086 Subpart CC will be kept for the life of the facility.

4.10.2.6 Certification

Based on the information presented in Section 4.10 of the FPOR, VESTS certifies the requirements of NR 664 Subchapter CC are being met.

NOTE:

Upon finalization of the FPOR, a new Section 4.6.11 titled *Hazardous Secondary Materials* will be added which will state, "Hazardous Secondary Materials (HSM) are not managed at the VESTS facility."

5. Preparedness and Prevention

The TSDF is designed, constructed, maintained, and operated to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

The preparedness and prevention features of the facility include fire protection, communications, security, spill containment, and a back-up power generator. These features have been designed and implemented to facilitate the protection of air, groundwater, and surface water during facility operations.

VESTS will maintain and operate its facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water that could threaten human health or the environment.

5.1 Fire Prevention (NR 670.014(2)(i), NR 664.0017(1))

The hazardous waste storage rooms are constructed of four-hour fire prevention concrete walls, ceiling, and floor. The storage rooms have a total surface area of approximately 2,498 square feet for hazardous waste storage, as described in Section 3.1 of the FPOR. To prevent accidental ignition or reaction of ignitable or reactive wastes, the following sources of ignition are excluded from the TSDF: open flames, smoking, cutting and welding, hot or sparking equipment, and radiant heat. Also "No Smoking" and "Danger – Unauthorized Personnel Keep Out" signs are placed at the entrances of the TSDF and conspicuous places in the TSDF to warn personnel of the potential fire hazard. Non-sparking lights for illumination, non-sparking ventilation ducts, and heat detectors (as part of the connection to the fire alarm annunciation panel) are located in the TSDF pods.

5.2 Fire Protection and Control Systems (NR 662.252(3)-(4)/ NR 664.0032(3)-(4))

The design of the TSDF, which includes the segregation of wastes by the use of storage rooms, prevents total involvement of all hazardous waste stored at the facility in the event of a fire, explosion, or spill release. The segregation of wastes within storage rooms allows for a specific fire protection system for classes of waste.

A dry-line sprinkler system is installed, in accordance with the City of Port Washington building code ordinances, throughout the ceilings of the PPE emergency response materials room, office area, above the storage room ceilings, the fluorescent lamp recycling area and room, the retort room, and the household hazardous waste accumulation area. The system is maintained by an outside vendor knowledgeable in the type of system. The dry-line sprinkler system contains sprinklers with a temperature rating of 165°F. The water supply from the City of Port Washington has a hydrostatic pressure of approximately 100 pounds per square inch (psi). A water flow release will activate the fire alarm system. The accompanying air pressure system maintains pressure at approximately 35 psi. A malfunction in the airline system is detected by a high-low pressure switch and will activate a supervisory alarm. If the main water valve is turned, a tamper switch detector will activate a trouble alarm.

A Halogen 1301 Fire Protection System is installed in Storage Rooms 1, 2, and 3. A thermal and photoelectric detector is present in the rooms to detect an existing fire or explosion. The two fire protection systems, the Halogen 1301 Fire Protection System and the dry-line sprinkler system, are monitored using a control unit panel. The control panels are divided into different zones based on detector, halogen flow, water flow, and trouble and alarm conditions.

Activation of a compatible two-wire detector or any normally open fire alarm initiating device will sound the audible devices, trip a municipal box, notify a remote station, annunciate a fire zone, and energize supplementary relays. The control unit panel is maintained by an outside vendor knowledgeable with the unit.

Portable fire extinguishers are provided throughout the facility including non-operational areas such as office spaces. Properly rated extinguishers are provided based on the expected materials stored in the area. Personnel are not required to use the extinguishers but if comfortable to do so, may respond to a small fire with the use of an extinguisher in the area.

5.2.1 Fire Prevention for Retort Systems

The TSDF's retort equipment and operations employs several fire prevention measures. Figure 4-2 and the MPAP in Appendix EE provide supporting information on these measures.

5.3 Communication Equipment (NR 662.252(1)-(2)/NR 664.0032(1)-(2), NR 662.254/NR 664.0034)

The TSDF control unit(s) has a direct connection module to HSM Security (Honeywell) who monitors the system and will notify the Ozaukee County Sheriff's Dispatch Center, who subsequently notifies the City of Port Washington Fire Department (PWFD) during an emergency. Security Knox-Boxes are located at the facility drive gate entrance and office/laboratory area entrance of the TSDF. These boxes provide keys to ensure quick access to the fire alarm control unit(s) for the PWFD during an emergency alarm. Pagers, with alarm signals, are worn during non-business hours by the Emergency Coordinator (EC) or a designated alternate for immediate emergency contact. Contact information can be found in Appendix HH of the FPOR.

Telephones are available in the office area that will be used for emergency contacts of the City of Port Washington Police and Fire Departments. In addition, an intercom system will be used to warn personnel during an emergency. The intercom system allows personnel to communicate throughout the facility. In addition, a mobile phone that will be used for external or off-site communication during a fire or chemical spill in the TSDF will be retained in the office/laboratory area. The mobile phone will allow the EC or Alternate to view the scene of operations while summoning other emergency assistance.

Whenever hazardous waste is poured, mixed, or otherwise handled, personnel involved in the operations have immediate access to an internal alarm and emergency communication device.

Employees may be at the facility working alone to conduct inspections or work on administrative tasks within the office. During these times, the employee will have immediate access to a communication device capable of summoning external emergency assistance.

The fluorescent lamp and the mercury retort equipment do not operate when only one employee is at the facility.

5.4 Security System (NR 664.0014(2)(b) and (3))

Security at the TSDf is provided throughout a 24-hour day. Entry/exit and use of the storage rooms is controlled by the Operations Manager. "Danger – Hazardous Waste Storage Area-Unauthorized Personnel Keep Out" and "No Smoking" signs are placed at all entrances of the storage rooms and loading dock areas to serve as warnings to VESTS personnel or clientele.

- ◆ The overhead door to the HHW collection area will remain closed, except during hours of HHW operation or when supplies for the facility are transferred through the door. An attendant will be located inside the facility when the door is open.
- ◆ The entrance door leading into the previously used laboratory area of the facility will remain closed. The door does not provide direct access to any hazardous waste operation area within the facility. The door has signage indicating "ALL VISITORS MUST SIGN IN AT OFFICE."
- ◆ The doors leading directly to the hazardous waste storage rooms and the retort room from outside the building are locked. The doors do not have access handles or door knobs to allow for entry. Access to the hazardous waste storage rooms is only gained from inside the building. These inside doors to the hazardous waste storage rooms are closed and locked during non-operating hours. One of the functions that facility operations personnel serve while working in the area of the hazardous waste storage rooms is to serve as an attendant. The attendant is located at the loading dock area, adjacent to the access doors during operating hours. The attendant routinely moves waste in and out of the storage rooms as part of the operations.
- ◆ The overhead door to the lamp recycling area will remain closed at all times, except when material or wastes (e.g., aluminum end-caps) are transferred through the door. An attendant will be located either inside the lamp recycling area or immediately outside the door (e.g., in the roll-off truck moving the glass roll-off box or on a forklift transferring aluminum end-caps into the roll-off box).
- ◆ A VESTS attendant will be present in the facility when non-VESTS Emergency Services personnel are present in the facility.

The active portions of the TSDf are enclosed by secured fence and locked gate. The main locked gate provides access from Mineral Springs Drive. An electric slide gate operator is controlled by programmable electronics. The gate will be normally closed and authorized personnel will be able to enter the gate by entering a security code or programmed remotes. Emergency response team members will be notified of the access code. Unauthorized personnel will be required to press an intercom button and VESTS personnel will remotely open the gate. The gate system will be equipped with an under-pavement loop detector system consisting of an inner free exit/safety loop and an outer safety loop.

Two emergency exit gates are located in the facility fence to provide emergency egress from the fenced yard. The gates can only be opened from inside the fenced area. The emergency exit gates are identified on Drawing D-2.

5.5 Spill Containment Capacity and Spill Control Equipment (NR 664.0175(2)(a)-(b), NR 670.014(2)(h)2-3, NR 662.252(3), NR 664.0032(3))

The RCRA storage locations for the TSDF are located indoors. The indoor storage prevents run-off from hazardous waste handling areas to other areas of the facility, the environment, or to prevent flooding (NR 670.014(2)(h)2). The storage rooms are isolated from any sanitary drains, which prevent the contamination of water supplies (NR 670.014(2)(h)3).

The spill containment capacity of the facility is provided within the storage rooms. The floor of the TSDF storage areas is continuous base concrete floors (NR 664.0175(2)(a)). Each storage room has a concrete floor constructed as a monolithic pour using a 4,000-psi concrete with flash and polypropylene fibers. The concrete was wet cured to reduce the potential for cracking and to increase the impervious nature of the concrete. These construction methods provided a floor that is sufficiently impervious to leaks (NR 664.0175(2)(a)). A copy of the original facility floor plan is included in Appendix T as documentation of the original construction of the storage rooms (NR 670.015(1)(a)).

In March 2025, as presented in the photographs in Appendix T, select areas of the storage rooms' floors remain intact and do not have evidence of cracking. The floor system and associated containment berms provide prevention of material releases from impacting soil or groundwater beneath the TSDF. Because the rooms are indoors, this construction also provides a method of preventing surface water and precipitation contamination. In addition, the indoor rooms and the facility are located outside of the floodplain to prevent run-on from entering into the containment system (NR 664.0175(2)(d) and NR 670.015(1)(d)).

Spill control equipment and absorbents and other emergency response equipment are included in Table 8-3 of the Contingency Plan located in Section 8 of the FPOR.

5.5.1 Storage Rooms (NR 670.014(2)(i), NR 670.015(1)(b), (c), and (e), NR 670.015(2)(a)-(b); NR 664.0017(1), NR 664.0175(2)(c)-(e)), NR 664.0175(4); NR 662.255/NR 664.0035)

The TSDF is divided into three separate storage rooms divided up into pods. For storage pods 1A, 1B, 2A, 2B, and 2C, the largest single container potentially stored is a tote with a rated capacity of 350 gallons. For all other storage pods the single largest container potentially stored is a 95-gallon drum. Containers without free liquids need not be considered for the capacity limits (NR 664.0175(2)(d)). The storage pods' design and operation for the structure complies with the requirements for containers of F020-F023 and F026-F028 wastes that do not contain free liquids (NR 664.0175(4)).

The storage room storage capacity, associated secondary containment calculations, and a cross-section drawing of the floor is provided in Appendix T.

Storage Room 1 of the TSDF

Storage Room 1 has a surface area of 660 square feet and a continuous base concrete floor segregated by floor sealed 3.5-inch-high concrete berms into two pods. The front of each pod has a raised walkway to allow removal or placement of hazardous waste containers. Storage

Room 1 contains a segregated sub room, which is a fully enclosed room with two-hour fire prevention concrete walls, door, ceiling, and floor. The floor is encircled by a 3.5-inch-high berm. The sub room is 68 square feet and can store 501 gallons in drums.

Storage Room 2 of the TSDF

Storage Room 2 has a surface area of 1,130 square feet and has a continuous base concrete floor and is divided into three pods segregated by floor sealed 6-inch-wide and 3.5-inch-high berms. Pods 2A and 2B are also separated by a 2-foot-high concrete wall. Each pod has 3.5-inch-deep raised entrances that serve as berms.

Storage Room 3 of the TSDF

Storage Room 3 has a surface area of 640 square feet and has six pods. Storage Room 3 of the TSDF has a continuous base concrete floor segregated by floor sealed 6-inch-wide and 2-feet-high impervious concrete walls, into six pods. The front of each pod has a raised walkway to allow removal or placement of hazardous waste containers, and each are 3.5-inches deep.

Although the concrete floors of the storage pods are sloped to facilitate drainage, containers are stored on a raised steel grate to prevent contact with any freestanding liquid within each pod that may occur from a spill (NR 664.0175(2)(b), NR 670.015(1)(b) and (2)). The steel grate is level with the sub room entrances. In addition, a portable peristaltic pump is retained in the facility for emergency removal of spilled hazardous wastes. Sections of the steel grate would be removed to gain access to the spilled material. Spilled material would be contained and moved away from the contaminated area until the spill could be mitigated. The spilled waste will be removed and analyzed from the containment area in a “timely manner” to prevent overflow (NR 664.01 75(2)(e) and NR 670.0015(1)(d)). “Timely manner” is defined as removing spilled material as soon as it can safely be accomplished, not to exceed 24 hours following discovery.

Adequate aisle space is maintained to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of facility operation in an emergency,

5.5.2 Storm Water Drainage Network

Storm water drains and basins are located throughout the asphalt parking lot areas of the facility. The storm water flows to natural basin which is controlled by a valve located east of the building (Drawing D-2). The valve remains normally closed and is only opened manually to allow for storm water drainage. Parked trailers are inspected daily and documented for spills prior to opening the storm water drainage valve. The storm water then enters the retention basin. The discharge pipe is covered with a protective screen to prevent access. This storm water drainage network has been established to maintain the site’s natural drainage pattern.

In the event of a spill, lateral movement of material will be contained by constructing temporary berms using absorbent. The storm water drains will be protected by covering with a plastic sheet and plywood and building a dike of absorbent material around each drain. Gross liquid spills will be containerized using a peristaltic pump. Small liquid spills will be immediately absorbed and containerized. If a spill were to enter the storm water drainage network, the valve will be checked to ensure closure. The network will be cleaned using a vacuum system and

flushed using a decontamination solution. The spill material and decontamination solution will then be managed as a hazardous waste, pending waste stream classification. The decontamination solution will be tested to determine whether the final rinse is a hazardous waste. VESTS transportation equipment will be used to provide the vacuum system (vac-truck) to clean out the network. The Contingency Plan included in Section 8 of the FPOR discusses incident response procedures for handling and preventing contamination of soil, surface water, and groundwater.

5.5.3 Back-up Power Generator (NR 670.014(2)(h)4.)

A 500-kilowatt back-up power generator is located east of the TSDF building. The back-up power generator minimizes and mitigates the effects of a power outage (NR 670.014(2)(h)4.). The start-up of the generator is activated when the electricity transfer switch indicates an interruption to the incoming power supply. The generator will produce three phase power to the transfer switch and feed sufficient power for all single phase and three phase equipment. This includes providing power to all critical systems, including air pollution control equipment and vacuum pumps associated with the retort processing equipment. These systems have been configured to auto restart when the back-up power generator comes online. The generator will continue to operate 30 minutes beyond the return of utility supplied electricity.

The back-up power generator has a 793-gallon capacity aboveground storage tank (AST) containing diesel fuel and is located beneath the generator unit. The generator and the AST situated on top of a manufactured-built secondary contaminant pad with a spill capacity of 1,614 gallons. Oil dry and absorbent pads are available to contain any spills during filling of the AST. A "Tier I Qualified Facility Spill Prevention, Control, and Countermeasure [SPCC] Plan" has been developed for the AST. This Plan is available for review at the facility.

5.5.4 Air Emission Controls in Retort Room (NR 670.014(2)(h)6.)

The retort room has an isolated ventilation system, which collects and controls the fugitive mercury emissions generated during opening containers, de-packing containers, and sorting debris and devices prior to retorting in the retort room (F99). See Section 4.5.1.4 Retort Room Fugitive Emissions (F99) for additional details.

5.5.4.1 Retort Vacuum Monitoring (NR 670.014(2)(h)6.)

As part of the Class 1 Modification, additional vacuum monitoring sensors are being installed for each retort oven (P10, P11, P14). Additional details can be found in Section 4.5.2.1 Retort Vacuum Monitoring.

5.5.4.2 Flue Gas Control Monitoring (NR 670.014(2)(h)6.)

The flue gas exhaust from each oven (P10, P11, P14) will be ducted to emission control equipment prior to being exhausted through the flue gas stacks S12, S13, and S17 respectively. Additional details can be found in Section 4.5.2.2 Retort Vacuum Monitoring.

5.5.4.3 RipSys (R3) and Magna Drum (R4) Retort Natural Gas Fired Oven (P10 and P11)

Retort units R3 and R4 are natural-gas heated chambers. Additional details can be found in Section 4.5.1.1 RipSys (R3) and Magna Drum (R4) Retort Natural Gas Fired Oven.

5.5.4.4 Once Wisconsin Oven Corporation Natural Gas Fired Oven, a Model Batch-8/8/6-12G (R5)

The WOC Natural Gas Fired Oven (R5) is a natural gas fired unit (P14). Additional details can be found in Section 4.5.1.3. One WOC Natural Gas Fired Oven, and Model Batch-8/8/6-12G (R5).

5.6 Testing and Maintenance of Equipment (NR 662.253/NR 664.0033)

Facility communications and alarm systems, fire protection equipment, spill control equipment and decontamination equipment will be maintained and tested as necessary to ensure its proper operation in time of emergency. The fire alarm is tested annually to ensure its function. Inspections of fire protection equipment, spill control equipment, and decontamination equipment are conducted monthly. Records for the annual fire alarm test and monthly inspections are maintained on site.

5.7 Arrangements with Local Emergency Agencies, Hospitals, and Contractors (NR 662.256/664.0037)

Information regarding the arrangements that VESTS has with local emergency agencies, hospitals, and contractors is discussed in the Contingency Plan included as Section 8 of the FPOR.

6. Waste Analysis Plan

In order to ensure proper hazardous waste handling and storage, a Waste Analysis Plan (WAP) is used for waste received into the TSDF. The WAP outlines how the TSDF will comply with the requirements of NR 670.014(2)(b) and (c) and NR 664.013. The WDNR provided a WAP template (2023-01-27 WDNR WAP Example Prelim Version 2) along with the Call-in Letter issued to VESTS dated March 12, 2024.

VESTS has customized that template to reflect facility operations. Please see Appendix NN for a copy of the WAP.

7. Recordkeeping Procedures

7.1 Facility Inspection Schedule (NR 664.0015(2)(a)-(d), (3), and (4))

The frequency of the inspections listed below has been developed to prevent an environmental or human health incident (NR 664.0015(2)(d)). The schedule of the inspections also has been established to ensure any necessary remedy as a result of the inspection will be completed in a timely fashion to prevent an environmental or health hazard (NR 664.0015(3)).

The inspection logs will include the date and time of inspection; inspector name; observations made; and the date and type of remedial actions (NR 664.0015(4)). Inspection records are retained for no less than three years (NR 664.0015(4)). The inspection form or log will document the timeframe for the remedy corrective action if the problem does not lead to an immediate environmental or health hazard (e.g., bent fence post) (NR 664.0015(3)). All operating records, including inspection records, are maintained by VESTS through the closure of the TSDF.

7.1.1 Weekly Container Inspection (NR 664.0015)

Inspections of the TSDF are conducted weekly. The goals of the weekly inspections of the container storage areas are to ensure conditions are adequate to prevent environmental or human health incidents (NR 664.0015(2)(d)). As required in NR 664.0015(2), the scope of the weekly inspections and respective recordkeeping entail the following procedures:

1. Inspection of general TSDF integrity, particularly examining condition of structure walls and entrance doors.
2. Site inventory of waste drums and containers stored in the storage pods will be checked against the current electronic TSDF operating record for waste description, container size, volume, and generator identification.
3. Inspection of TSDF floor integrity and condition of concrete retention berms. Condition of berms, walls, steel grate work, and loading dock area checked for deterioration. Also, the floor and berm interfaces and trench checked for standing liquids and debris buildup.
4. Inspection of drums and containers for leakage or deterioration (NR 664.0174). Also, proper drum and container segregation checked according to hazard classification and compatibility.
5. Inspection of drums and containers for visible cracks, holes, gaps, or other open spaces into the interior of the container when the cover and closure devices are secured in the closed position (NR 664.1088).
6. Spill control equipment and materials are inspected weekly to ensure proper function and adequate supplies if an emergency occurs. Vermiculite retained for spill cleanup is checked for condition and amount available. See Section 5 of the FPOR for Emergency Preparedness and Prevention information.

7.1.2 Daily Inspections (NR 664.0015(2)(d))

7.1.2.1 Unloading and Loading

The TSDF floor, entrances, loading dock, and adjacent parking lot are checked daily for chemical spillage after each loading or unloading of wastes (NR 664.0015(2)(d)). Containers containing waste materials subject to NR 664 Subpart CC requirements will be inspected at the time of acceptance at the TSDF (NR 670.014(2)(e)). Any discrepancy to the container closure requirements will be documented on the profile discrepancy form, along with any necessary corrective measures to be completed within five days of the notice (NR 664.1086(3)(d)(3)).

7.1.2.2 Area Mercury Air Monitoring

Area mercury air monitoring is conducted daily of the area air concentration of mercury relative to recycling operations. Every day after eight hours of mercury recycling operations, and at least 15 minutes before stopping operation, the ambient air concentration of mercury is measured in the facility using a direct reading instrument. The measurements are entered on an Air Monitoring Log sheet and will be maintained in the TSDF files. Time-weighted average (TWA) personal air monitoring may be conducted periodically for mercury as part of the Industrial Hygiene (IH) program.

The current Occupational Safety and Health Administration (OSHA) standard for mercury is a ceiling of 0.1 milligram per cubic meter (mg/m^3). National Institute of Occupational Safety and Health (NIOSH) has recommended that the permissible exposure limit be $0.05 \text{ mg}/\text{m}^3$ averaged over an eight-hour work shift. The American Certified General Industrial Hygienists (ACGIH) have established a recommend permissible exposure limit of mercury at $0.025 \text{ mg}/\text{m}^3$ averaged over an eight-hour work shift. If the measurements for the ambient readings or breathing zone are less than $0.025 \text{ mg}/\text{m}^3$, employees will be permitted to work in Level D PPE.

If the concentration range between $0.025 \text{ mg}/\text{m}^3$ and $1.0 \text{ mg}/\text{m}^3$ is observed inside the retort room, the employees shall work in Level C PPE. If the concentration exceeds $1.0 \text{ mg}/\text{m}^3$, but below $2.5 \text{ mg}/\text{m}^3$, the employee will work with an airline respirator with hood. If the concentration exceeds $2.5 \text{ mg}/\text{m}^3$, the employee will work in Level B PPE, airline respirator with tight fitting face piece an escape bottle or Self-Contained Breathing Apparatus. If the concentrations exceed $1.0 \text{ mg}/\text{m}^3$, an investigation is conducted to identify and correct the source of the vapors.

7.1.2.3 Air Permit Monitoring

The WDNR Air Permit requires monitoring at specific locations and for specific parameters including mercury concentrations, vacuum readings, and temperature levels. The WDNR Air Permit requires monitoring to be conducted "once for every 8 hours of source operation or once per day, which yields the greater number of measurements." The measurements are recorded on the Air Monitoring Log presented in the MPAP (Appendix EE).

7.1.3 Retort Inspections (NR 664.0015(2)(a) – (d), (3) and (4))

As a component of the start-up procedure for each batch processed in one of the retort ovens, an inspection is performed. This includes inspecting the contents of the oven as well as the vacuum piping and the connections to the vacuum sensors. A visual inspection is performed on the following:

- ◆ Each drum or kettle as it is loaded into the oven. This inspection is looking for any deformities or defects that could impact the ability of the container to hold a vacuum.
- ◆ The vacuum piping connecting the drums or kettles to the vacuum header and condenser system, including articulating joints, connections and clamps, associated with each active retort vessel and drum prior to start-up of the oven. The inspection will evaluate the structure integrity of the items.
- ◆ The piping connecting the drums or kettles to the vacuum sensors, including articulating joints, connections and clamps, associated with each active retort vessel and drum prior to start-up of the oven. The inspection will evaluate the structure integrity of the items.
- ◆ The start time for each retort oven is established when the natural gas burner begins operation and the vacuum is applied to the containers within the oven. The stop time for each retort oven occurs when the natural gas burner end operation and the vacuum applied to the containers within the oven is discontinued. The operation of the burners and vacuum recordings are collected by the data logger associated with the PLC.
- ◆ The PLC and data logger will also record the operation of flue gas emission controls through signal operation of the u-pass blowers (S18, S19, S20) for the heat exchangers and i-pass blowers (S12, S13, S17) associated activated carbon control devices (C15, C16, C17).

The inspections will be recorded on a retort batch worksheet. If any items do not pass inspection, the start-up process will be suspended and the deficiency will be corrected or repaired. The repairs or corrective actions will be noted on the retort batch worksheet or will be recorded on a maintenance work order.

7.2 Container Labeling

Drums and containers are properly labeled, marked and placarded, as applicable, before being transported from the TSDF in accordance with the applicable DOT regulations for hazardous materials under 49 CFR Part 172. Upon receipt of hazardous waste drums or containers into the TSDF, the drums or containers are immediately inspected for proper marking, labeling, and placarding. According to the waste description and designated DOT hazard class, each drum or container is segregated based on compatibility. Each container will be marked to identify the generator, its inventory number, its contents (e.g., profile number), and the date each period of accumulation began, if generated on site, or the acceptance date into inventory for incoming wastes.

7.3 Hazardous Waste Manifests

The TSDF is a generator of hazardous waste and also a licensed/permitted treatment and storage facility. Hazardous waste transported to and from the TSDF is accompanied by a Uniform Hazardous Waste Manifest (manifest).

Designated facility personnel are required to sign and date all manifests accompanying shipments of wastes in order to certify that the waste received is what is stated on the manifest. Discrepancies in a manifest are noted and immediately investigated. If the discrepancy cannot be resolved within 15 days, VESTS will provide the WDNR a written

notification describing the discrepancy and the attempts to rectify the problem. Ultimately discrepancies are corrected using the EPA's e-Manifest system.

7.3.1 Acceptance of Shipments of Hazardous Waste

- ◆ When a shipment of hazardous waste arrives at the facility, the uniform hazardous waste manifest is reviewed by site personnel to verify compliance with all RCRA and DOT requirements.
- ◆ Site personnel follow the procedures outlined in the Waste Analysis Plan (Section 6 of the FPOR).
- ◆ Upon waste acceptance into the facility, Sections 19 and 20 of the uniform hazardous waste manifest are completed and the waste is placed into storage or treated on site.
- ◆ The manifest copies are forwarded to the appropriate parties and uploaded to the EPA electronic manifest system or its successor system.

7.3.2 Rejection of Partial Shipments of Hazardous Waste

- ◆ When a shipment of hazardous waste arrives at the facility the uniform hazardous waste manifest is reviewed by site personnel to verify compliance with all RCRA and DOT requirements.
- ◆ Site personnel follow the procedures outlined in the Waste Analysis Plan (Section 6 of the FPOR).

If the waste acceptance determination process indicates a portion or portions of the waste does not conform to the waste profile, the information regarding non-conformance and/or discrepancies is reported to the Technical Customer Advisor (TCA). The TCA will contact the customer in an attempt to resolve the discrepancy. If necessary, the TCA may consult with the Operations Manager.

- ◆ If the non-conformance and/or discrepancies are resolved, the procedures for the acceptance of shipments of hazardous waste, Section 7.3.1, are completed.
- ◆ If all or a portion of the non-conformance and/or discrepancies cannot be resolved, a portion of the waste shipment is rejected from the facility.
- ◆ At this time Section 18, Discrepancy Section, of the uniform hazardous waste manifest is completed by checking the Partial Rejection Box and the new Manifest Number for the rejected portion of the shipment is recorded on the manifest.
- ◆ Sections 19 and 20 of the manifest should also be completed for the wastes that will be accepted at the facility.
- ◆ A new uniform hazardous waste manifest designating the new TSDF or the generator's name and address as the receiving facility is prepared.
- ◆ Attach a copy of the original uniform hazardous waste manifest to the new manifest.

- ◆ The manifest copies are forwarded to the appropriate parties and uploaded to the EPA electronic manifest system or its successor system.

7.3.3 Rejecting Complete Shipments of Hazardous Waste

- ◆ When a shipment of hazardous waste arrives at the facility, the uniform hazardous waste manifest is reviewed by site personnel to verify compliance with all RCRA and DOT requirements.
- ◆ Site personnel follow the procedures outlined in the Waste Analysis Plan (Section 6 of the FPOR).

For non-bulk shipments, if the waste acceptance determination process indicates that the waste does not conform to the waste profile, the information regarding non-conformance and/or discrepancies is reported to the TCA. The TCA will contact the customer in an attempt to resolve all discrepancies. If necessary, the TCA may consult with the Operations Manager.

- ◆ If the non-conformance and/or discrepancies are resolved, the procedures for the acceptance of shipments of hazardous waste, Section 7.3.1, are completed.
- ◆ If the non-conformances and/or discrepancies are not resolved, the entire waste shipment is rejected by the facility.
- ◆ At this time, Section 18, Discrepancy Section, of the uniform hazardous waste manifest is completed and the Full Rejection Box on the manifest is checked.
- ◆ If the transporter that delivered the hazardous waste to the facility has not left the site, the waste can be rejected on the original manifest by completing Section 18b with the Alternate facility or the original generator's name, address, and EPA ID number.
- ◆ If the transporter has left the facility, a new uniform hazardous waste manifest must be completed for the rejected shipment. The new manifest number is entered into Section 18 of the original uniform hazardous waste manifest and the new manifest is completed indicating VESTS' name, address, and EPA ID number as the generator of the waste and the Alternate facility or the original generator name, address, and EPA ID number as the designated facility.
- ◆ If a new manifest is utilized, the original manifest will be attached to the new manifest.

7.3.4 Review of Manifest Prior to Shipment

The term generator represents a generator shipping incoming waste into VESTS or VESTS acting as a generator while shipping off site. The following manifest system is incorporated into the facility's operations:

- ◆ Any generator who transports, or offers for transportation, hazardous waste for off-site storage, treatment, disposal, or recycling shall prepare a uniform hazardous waste manifest form before the waste is transported.
- ◆ A generator will specify on the uniform hazardous waste manifest one designated facility. The designated facility must be a permitted hazardous waste TSDF, an interim

status hazardous waste facility, or exempt from permitting under RCRA approved to accept and manage the hazardous waste.

- ◆ A generator may also specify on the uniform hazardous waste manifest one alternate facility which meets the requirements for the acceptance and management of the hazardous waste in the event that an emergency prevents the delivery of the waste to the primary designated facility.
- ◆ If the transporter is unable to deliver the hazardous waste to the designated facility or the alternate facility, the generator shall either designate another alternate facility or instruct the transporter to return the waste.
- ◆ VESTS will maintain on file the copies of the manifests in accordance with s. NR 662.040 and 664.0071(1)(b)(5) for a period of three years from the date the waste was accepted by the initial transporter and shall be available at reasonable times for inspection by the WDNR or EPA.
- ◆ Within 45 days of the receipt of a shipment of hazardous waste, the facility will provide a copy of the uniform hazardous waste manifest bearing all required signatures to the WDNR in an electronic format specified by the WDNR using the EPA electronic manifest system or its successor system

7.3.5 Other Reports and Records

VESTS maintains a computerized (written) operating record which will be maintained until the closure of all RCRA units. Below are examples of operating records maintained at the facility in compliance with NR 664.0073.

- ◆ Types and quantities of wastes received.
- ◆ The methods and dates the wastes were treated, stored, or shipped off site; the location of received wastes which can be cross-referenced to manifests.
- ◆ Incident reports that required implementation of the contingency plan.
- ◆ Records and results of inspections as required by NR 664.0015(4).
- ◆ Data and reports resulting from releases from solid waste management units.
- ◆ Waste Analysis Reports, as described in Section 3 of the FPOR and the Waste Analysis Plan (Section 6 of the FPOR), for all hazardous waste streams managed at the facility will be maintained for at least three years.
- ◆ For off-site facilities, notices to generators as specified in s. NR 664.0012 (2).
- ◆ A certification by the licensee no less often than annually, that the licensee has a program in place to reduce the volume and toxicity of hazardous waste generated at the facility to the degree determined by the licensee to be economically practicable; and the proposed method of treatment, storage, or disposal is that practicable method currently

available to the licensee which minimizes the present and future threat to human health and the environment.

- ◆ All closure cost estimates under NR 664.0144.

VESTS complies with the reporting and recordkeeping requirements associated with the Land Disposal Restrictions requirements in 40 CFR Part 268.

7.3.5.1 Daily Acceptance Reports

Daily acceptance reports are printed from the electronic inventory. The report provides a description of the waste type, weight of the container or count of lamps, the inventory and profile number. This acceptance report backs up the incoming manual weigh sheets and manifest information. The waste is then included as part of the inventory until after it is shipped for disposal, bulked, or consolidated into a different container. A hard copy of the Daily Acceptance Reports, manifest copies, and weigh sheets are maintained for a minimum of three years.

7.4 Annual Hazardous Waste Report

An Annual Hazardous Waste Activity Report is completed and submitted to the WDNR by March 1 of each year. The annual report shall be submitted on the WDNR forms, shall cover facility activities during the previous calendar year, and at a minimum, shall include the following information:

- ◆ The EPA identification number, name, and address of the facility.
- ◆ The calendar year covered by the report.
- ◆ The EPA identification number of each hazardous waste generator from which the facility received a hazardous waste during the year.
- ◆ A description and the quantity of each hazardous waste the facility received during the year.
- ◆ The method of treatment, storage, or disposal for each hazardous waste.
- ◆ The most recent closure cost estimate under s. NR 664.0142.
- ◆ A description of the efforts undertaken during the year to reduce the volume and toxicity of the waste generated.
- ◆ The certification signed by the owner or operator of the facility or an authorized representative.

A copy of the annual reports will be maintained for a period of at least three years from the due date of the reports.

7.5 Storm Water Drainage Network Inspection

The storm water drainage network will be inspected prior to the opening of the storm water control valve to allow for the discharge of storm water into the runoff water collection basin. The inspection forms will be retained as part of the TSDF operation records.

7.6 Inspection of Records

Records including plans required under NR 660 to 673 shall be furnished upon request, and made available at all reasonable times, for inspection by any officer or employee of the WDNR.

8. Hazardous Waste Contingency Plan (NR 670.014(2)(g))

8.1 Purpose (NR 664.0051(1))

This plan describes actions to be taken by VESTS personnel in response to emergencies. The plan is to ensure that site personnel are prepared to respond to an emergency which may occur during the managing of hazardous wastes at the TSDF in a manner that minimizes hazards to human health and the environment in the event of a release (NR 664.0051(1)).

Copies of the Contingency Plan are retained at the TSDF (NR 664.0053). Copies of the Contingency Plan will also be distributed to the appropriate local police departments, fire departments, hospitals and state and local emergency response teams that may be called upon to provide emergency services. This document may also be submitted to the local emergency planning committee, as appropriate (NR 662.262(2)).

The TSDF has also developed a SPCC Plan as a Tier 1 Qualified Facility and a MPAP. The SPCC covers the diesel fuel associated with the back-up power generator at the facility. The SPCC also covers oily wastes potentially contaminated with mercury which may be part of the hazardous waste container storage. The Contingency Plan will reference the SPCC Plan, but the Contingency Plan will have precedence for responding to incidence and releases (NR 664.0052(2)). The MPAP covers the processes and controls defined in the facility air operating permit, Permit# 246076050-S02. The MPAP includes procedures for the inspection, repair, operation, and emergency shutdown and start-up following an emergency.

8.2 General Facility Description and Operation

The TSDF is located at 1275 Mineral Springs Drive, Port Washington, Wisconsin. The locations of the facility's entrance and road inside the facility are presented on Drawing D-2. The primary hazardous wastes or universal wastes received at the facility are mercury-containing lamps, mercury-containing devices, and mercury-contaminated debris. Other hazardous wastes including HHWs are received into the facility only for temporary storage. No disposal of hazardous waste is conducted at the TSDF or adjoining areas. The mercury-containing devices and mercury-contaminated debris are treated through the metal recovery ovens (retorts). Mercury-containing lamps (e.g., fluorescent lamps) are recycled at the TSDF. Other operations completed at the TSDF include bulking, solidification of non-hazardous wastes in containers, and consolidation of packaged wastes.

The hazardous waste licensed section of the TSDF includes the storage rooms and the retort room. Adjacent areas include the loading dock area, material supplies storage area, office area, emergency response/PPE closet, fluorescent light recycling area, and HHW accumulation area (Refer to Drawing D-3).

8.2.1 Storage Rooms (NR 670.014(2)(i), NR 664.0017(1))

The hazardous waste storage rooms are constructed of four-hour fire rated concrete walls, ceiling, and floor. The storage rooms have a total surface area of approximately 2,498 square feet for hazardous waste storage, as described in Section 3.1 of the FPOR. Only containers (no tanks) of hazardous waste are stored in the rooms. The maximum hazardous waste storage in the rooms is approximately 20,000 gallons. The types of wastes to be handled and

stored at the TSDF, their associated hazards, and analytical parameters selected to characterize the wastes are indicated in Table 8-2.

The design of the storage rooms allows for maintenance of aisle space for movement of personnel and response equipment during an emergency. A raised walkway in the front of each pod allows for adequate aisle space for unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to each pod. In addition, drums are stored in rows to allow for accessibility and movement in the case of an emergency. Also, the segregation of specific hazard classes of waste by sub rooms and bermed pods eliminates mixing of incompatible wastes if a spill occurs. To prevent accidental ignition or reaction of ignitable or reactive wastes, the following sources of ignition are excluded from the TSDF: open flames, smoking, cutting and welding, hot or sparking equipment, and radiant heat. Also, "No Smoking" and "Danger – Unauthorized Personnel Keep Out" signs are placed at the entrances of the TSDF and conspicuous places in the TSDF to warn personnel of the potential fire hazard (NR 664.0017(1)).

Non-sparking lights for illumination, non-sparking ventilation ducts, and heat detectors (as part of the connection to the fire alarm annunciation panel) are the only mechanical sources that will require an electrical power source in the storage rooms. There are no heating or air conditioning installations in the storage rooms, or any electrically supplied spill control devices. Consequently, the impact of a power failure to the TSDF's storage rooms during routine operations or during an emergency situation is minimal.

If a power failure has occurred, the emergency back-up power generator will initiate operation. The generator is capable of supporting the electrical requirements of the facility. Until complete electrical power resumes, non-sparking portable lights are available in each room. The heat detectors continue to operate during a power failure through a battery power pack supplied in the fire alarm annunciation panel. Mitigation actions to an explosion, fire, or spill would not be seriously affected, whereby the emergency protocol described in this Contingency Plan could still be followed.

8.2.2 South Loading Dock Area

The design of the south loading dock area allows for collection of spilled material from an accident during loading and unloading due to the slope of the floor. Spilled material could be removed through use of a portable pump and transferred to compatible DOT specification containers. Also, if a spill occurred inside the loading dock area, the spill could readily be cleaned up. Absorption into soils and groundwater are not anticipated due to the impervious surface of these areas.

8.2.3 Diesel Fuel Aboveground Storage Tank

The emergency back-up power generator is located in the northeast corner of the TSDF building. The generator has a 793-gallon capacity diesel fuel AST. Both the generator and the AST are situated on a sealed secondary containment pad with a capacity of 1,614 gallons.

8.3 Emergency Coordinators and Responsibility/Authority (NR 664.0052(4) and NR 664.0055)

8.3.1 Emergency Coordinators and Alternates

In the event of any accident or emergency involving a hazardous waste, the first person to discover the situation will immediately inform the TSDF EC so that the Contingency Plan can be promptly initiated. The primary EC will be:

Matthew Scudder
Operations Manager
5834 N. 68th Street
Brown Deer, WI 53223
(262) 416-8061 (cell)
(262) 243-8917 (work)

In the absence of the primary EC, the following individuals in sequence will assume the EC responsibilities:

First Alternate	Second Alternate	Third Alternate
Justin Provo	Michael Grinner	Nicolas Bonvicini
EH&S Manager	Operations Supervisor	Operations Supervisor
1044 7 th Avenue	1612 West 2 nd Avenue	2210 N. 107 th Street
Grafton, WI 53024	Port Washington, WI 53074	Wauwatosa, WI 53226
(262) 225-1043 (cell)	(414) 313-8086 (cell)	(262) 416-5766 (cell)
(262) 243-8908 (work)	(262) 243-8940 (work)	(262) 243-8911 (work)

8.3.2 Responsibility and Authority (NR 664.0055 and NR 664.0056 (1) thru (8)(b))

The EC or Alternate has the authority to implement details of the Contingency Plan and will have the authority to commit all resources of the company to containment of an emergency. The EC and Alternates are thoroughly familiar with the Contingency Plan, site operations, waste type handled, facility records, and layout. The EC and Alternates have the following responsibilities and authority:

1. To commit resources to carry out the Contingency Plan.
2. Activate alarms and notify the state and local agencies.
3. Identify the character, source, amount and extent of a release, fire, or explosion.
4. Assess possible hazards to human health and the environment.
5. Notifies local authorities if evacuations are necessary.
6. Notifies emergency response officials of releases outside the TSDF (see Section 8.11.1 of this FPOR).
7. Take reasonable measures to ensure a fire, explosion, or release does not spread to other hazardous waste.
8. Monitors for leaks, pressure build-up, and gas generation if operations stop.
9. Arranges for the treatment, storage, or disposal of materials after receiving written WDNR concurrence that those wastes may be released for disposal.
10. Ensures no incompatible waste is stored until cleanup is completed.

11. Ensures all emergency equipment is clean and fit for use before operations resume.

Details on how the above responsibilities will be carried out are provided in the following sections.

8.4 Implementation of the Contingency Plan (NR 664.0056 and NR 664.0051 (2))

The Contingency Plan will be implemented immediately whenever a condition presents an imminent or potentially serious hazard to the public, company employees, the environment, or company property (NR 664.0051(2)). The following guidelines are developed to assist the EC or Alternate in proper emergency decision making. The Contingency Plan will be implemented if the following conditions occur on site or off site:

1. Fire and/or Explosion
 - a. A release of toxic fumes.
 - b. A fire spreads to the vicinity of ignitable materials.
 - c. A fire threatens to spread off VESTS' property.
 - d. The use of water or fire suppressant chemicals that may generate contaminated runoff.
 - e. An imminent danger of explosion exists.
 - f. A potential exists that could ignite other wastes.
 - g. An explosion has occurred.
2. Spills or Hazardous Material Releases
 - a. A spill occurs that may release flammable or ignitable vapors.
 - b. A release of toxic liquids or vapors.
 - c. A retort system or emission control malfunction resulting in an unpermitted release of elemental mercury or other pollutant to the environment.
 - d. An emission control malfunction resulting in the PLC monitoring system initiating shutdown of the retort natural gas burners.
 - e. A lamp processor or emission control malfunction resulting in an unpermitted release of elemental mercury or particulates to the environment.
3. Diesel Fuel Spill
 - a. A spill during fueling operations of the emergency back-up power generator.
 - b. Catastrophic failure or damage to the generator and AST.
4. Other Conditions
 - a. A natural storm condition that presents a serious hazard to the facility and adjacent industrial areas, such as a tornado.
 - b. A serious fire on adjacent property that threatens to spread into the TSDF and/or adjoining facility.
 - c. Electrical power outage to the facility caused by loss of incoming power service.

5. Medical Emergency
 - a. An employee or visitor to facility that requires medical attention due to illness or injury related to the scenarios described above and in regard to the hazardous waste management activities.

8.5 Emergency Response Procedures (NR 664.0052(1))

If an emergency occurs during normal working hours, the following procedures will be implemented.

1. The employee discovering the emergency will notify his/her immediate supervisor and the EC or Alternate on site. The EC or Alternate will immediately notify all employees on site of the emergency by an intercom system and phone system. If a fire or potential for fire or explosion exists, the EC or Alternate will immediately notify the City of Port Washington Police and Fire Departments. The EC or Alternate will also notify the Wisconsin Division of Emergency Government (WDNR) if the emergency results in a release to the environment. Details regarding spill reporting requirements are described in Section 8.17. In addition, off-site personnel will be notified of the emergency as appropriate. Table 8-1 lists the emergency contacts and is posted throughout all work areas of the facility to provide immediate reference during an emergency.
2. Until arrival of the EC or Alternate, the immediate supervisor will direct appropriate localized response to the emergency.
3. The EC or Alternate may implement any or all of the Contingency Plan based upon their discretion. The EC or Alternate will proceed directly to the emergency site and assume control of the emergency response.
4. All employees will promptly assemble at the office/laboratory area door and standby to evacuate if ordered by the EC or Alternate.
5. The EC or Alternate will direct employees by intercom to evacuate if necessary. Employees will then evacuate the building in accordance with the Evacuation Plan (Drawing D-3) and proceed to a safe distance of 200 feet from the TSDF at the main driveway entrance. All employees and visitors will be directed to proceed to the assembly area 200 feet from the TSDF at the main driveway entrance, where roll will be taken by the EC or Alternate.
6. If a chemical spill or fire emergency occurs after normal working hours, the EC or Alternate will be notified immediately by pager system or cellular phone. The City of Port Washington Fire and Police Departments will also be notified. The EC or Alternate will instruct Emergency Response Team members to report to the facility as necessary. At least two VESTS employees will respond to the event. The primary local emergency authorities will be the City of Port Washington Fire and Police Departments.
7. The EC will complete the following activities as necessary based on the type of emergency:

- ◆ Inspect the main water supply valve and sprinkler control valve located adjacent to the laboratory entrance door to ensure the normal open valves are still open.
- ◆ Close the natural gas supply valves located on the meter structures outside in the walkway area between the main facility and the office building. The meter structure for the main facility has four supply valves. The meter structure for the office building has one supply valve.
- ◆ Isolate the electrical power for impacted equipment by closing and locking-out the disconnect or electrical panels.
- ◆ Initiate the shutdown of the retort oven natural gas burner operation via control panels, PLC panels, or computer access.

Shut off the main power switch, the bottom switch, located in the three-phase electric control panel located in the northeast corner of the building.

- ◆ Cover and isolate the storm water interceptor basins.
 - ◆ Deploy spill containment booms and/or absorbent around spill.
8. The EC or other trained individual(s) will administer "Good Samaritan" acts of First Aid, cardiopulmonary resuscitation (CPR), or utilize automated external defibrillator (AED) as trained or certified. Based on the medical emergency, the PWFD may be contacted for assistance. If responding, the PWFD will determine to which local hospital the injured or ill person will be transported. Generally, critical personnel will be transported to Aurora Grafton hospital and non-critical personnel may be transported to Asension Ozaukee.
 9. If incoming electrical power is lost to the facility, the EC will assess the facility operation while the back-up emergency power generator automatically provides electric service to the facility.
 10. The EC will initiate the shutdown of the retort ovens natural gas burner operation via control panels, PLC panels, or computer access.

8.6 Site Security

The EC or Alternate will ensure that only authorized agency personnel and emergency service vehicles are allowed onto the property during the emergency. Persons must show proper identification to enter the area.

8.7 Identification and Assessment of Hazard

The EC or Alternate will immediately identify the character, source, amount, and extent of any released materials that occurred during an emergency situation. Method of identification will include all feasible means of evaluation including, but not limited to, the following:

- ◆ Review of TSDF chemical inventory, manifests, or any other relevant operating records.
- ◆ Visual observation.

- ◆ Portable instrument analysis.
- ◆ Chemical qualitative screening analysis.
- ◆ Chemical reference texts and applicable Safety Data Sheets (SDS).
- ◆ Review of PLC interface or computer monitoring results and alarms for the retort ovens.

The EC or Alternate will concurrently assess possible hazards to human health or the environment that may result from a release, fire, or explosion. The assessment will include, but not necessarily be limited to, the following factors and considerations:

- ◆ Toxic, irritating, or asphyxiating gases released.
- ◆ Mercury air monitoring of control stacks and ambient concentrations inside and outside the facility.
- ◆ Run-off: groundwater infiltration or soil contamination by hazardous wastes.
- ◆ Incompatibility or reactivity of hazardous wastes.
- ◆ Probability of explosion.
- ◆ Hazard to emergency response employees and protective equipment required.
- ◆ Hazard to adjacent industrial areas.

The EC or Alternate will immediately notify the Operations Manager of the emergency situation. The EC or Alternate will also notify appropriate state and local emergency authorities by phone immediately if the preliminary assessment reveals a potential danger to human health or the environment. Also, the National Response Center, the local Emergency Government Director, and the State Emergency Response Board must be immediately notified if an accident involves a spill of a hazardous substance equal to or greater than the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) reportable quantity (Table 8-1 lists these agencies). Any discharge of a hazardous substance must be reported immediately to the Division of Emergency Government or the WDNR.

8.8 Response Team Formation and Assistance

The majority of the spill response activities will be completed by the TSDF team members. The EC or Alternate or designee will direct an Emergency Response Team (two-person minimum) respective to the type of incident that has occurred. The TSDF Emergency Coordinators and alternatives (as designated in Table 8-1) are trained in advance for emergency response actions (i.e., equipment selection, spill mitigation, and fire control using fire extinguishers). Table 8-1 lists the emergency coordinators' work (W) and home (H) telephone numbers.

Additional resources may be utilized through contracted arrangements with emergency response providers. Transportation and disposal services may also be employed through the VESTS operations in Menomonee Falls, Wisconsin. Any subsequent wastes that need to be disposed of will be sent with appropriate licensed disposal facilities.

8.9 Arrangements with Local Emergency Agencies, Hospitals, and Contractors (NR 664.0052(3))

In accordance with NR 664.0052(3), NR 664.0037, and NR 662.256, VESTS has worked with the primary local emergency agency, the PWFD to provide firefighting activities as necessary. The control of the firefighting activities will be the responsibility of the ranking Fire Officer. The PWFD will seek technical and support assistance from the Ozaukee County Hazardous Material Team for incidences or fires involving hazardous materials.

The PWFD also provides rescue services for injured or ill personnel requiring immediate medical attention. The PWFD ambulance team will transport injured or ill personnel to one of two local medical facilities, Asension Ozaukee in Mequon, Wisconsin or Aurora in Grafton, Wisconsin.

The City of Port Washington Police Department (PWPD) will support the PWFD in any necessary traffic control, public control, or any necessary evacuation activities of the surrounding area.

The TSDF has arrangements with various contractors to provide non-emergency services. The list of examples of vendors provided in Table 8-1. Vendors may change based on availability and business conditions.

8.10 Control Procedures and Equipment (NR 664.0052(5))

Large chemical spills, air releases or fires are incidents that will require the activation of the Contingency Plan at VESTS. Natural disasters such as tornadoes, lightning, etc., may also be a cause for initiations of the Contingency Plan. Conditions requiring response from natural disasters, however, would be limited to fire or chemical spills therefore the same actions would be taken, regardless of the cause. The following section establishes some controlling procedures and guidelines to govern VESTS's response to a fire, explosion, spill, or unplanned release of hazardous waste on site or off site.

If an explosion or fire has occurred, or is imminent, the following actions will be taken in addition to the general emergency response procedures:

1. Appropriate fire extinguishing equipment will be activated: halon system, sprinkler system, or fire extinguishers.
2. Doors will be closed to affected areas.
3. The EC or an Alternate will be contacted.
4. The PWFD will be notified immediately.
5. Operational and non-emergency activities will stop.
6. Hazardous waste containers will be removed and isolated from the path of a fire if safety allows.
7. If bulking or transferring operations are occurring during an incident, these operations shall cease. If safety allows, transfer hoses will be disconnected, hatches on tankers closed, roll-off boxes covered, and the vessel will be inspected for leaks.

8. Transport trailers, tanker trucks, and roll-off boxes located in the loading dock areas will be removed from the path of the fire if safety allows. Following the removal of the vehicles, the containers and vessels will be inspected for leaks.
9. Nonessential personnel will be evacuated to proper setback areas away from the incident.
10. The EC or Alternate will monitor for toxic gas emissions (e.g., mercury) in affected areas if safety allows.
11. Nonemergency equipment will be removed from access routes.
12. Injured personnel will be removed and treated by the EC or other trained individual(s) who administer "Good Samaritan" acts of First Aid, CPR, or utilize AED as trained or certified until medical professionals arrive.
13. If there are injured personnel or a possibility of injury in the containment effort, personnel will be taken to local hospitals as described in Section 8.5 of this Plan.

The Emergency Response Team will follow the directions of the EC or Alternate until the arrival of the PWFD, at which time the control of the firefighting effort will be referred to the Fire Officer in charge. The EC or Alternate will then make all relevant information available to the Fire Officer and other appropriate emergency agencies to ensure safe and proper mitigation actions. Also, the EC or Alternate will continue to stand by for technical advice and assistance to the emergency response agencies.

To support the control procedures, VESTS maintains various response equipment and alarms systems. Table 8-3 lists the types of safety and emergency equipment available at VESTS for emergency response, as well as alarm systems.

8.11 Spills or Material Release

8.11.1 General Procedures

If a spill or release occurs in the TSDF or from a process area, the following general procedures will be used to safely control the spill and to direct the cleanup. Spills will be immediately reported to the EC or Alternate. The EC or Alternate will determine the following preliminary information:

1. The chemical properties of the material spilled or released.
2. Location of the spill.
3. Estimate of the quantity released.
4. Flow direction of spilled liquid materials.
5. Injuries involved.
6. Possibility of fire or explosion.

7. Specific procedures suited to containment and cleanup of the materials and chemicals involved.

Upon determining the severity of the incident, an Emergency Response Team will be assembled to take immediate control actions made up of the VEST's Response Team and/or other emergency support listed in Table 8-1 Emergency Contacts. Spill control equipment will be quickly assembled and all other non-emergency equipment or vehicles moved away from the spill area. If serious or dangerous fire risk exists, the PWFD will be notified. The cleanup operation will commence only after receiving approval from the Fire Officer to proceed. Unnecessary personnel and bystanders will be moved to proper setback areas. Injured personnel will be removed by emergency agencies as quickly as possible.

If a spill of ignitable liquid occurs, all potential sources of ignition such as smoking material, sparking equipment, motor vehicles, etc. will be extinguished or shutoff immediately. If the EC or Alternate determines that vapor release from a spilled material poses a dangerous fire or explosion potential, the EC or Alternate will immediately contact the emergency agencies listed in Table 8-1, then move personnel to a safe setback area. Under the direction of the PWFD, VESTS's Emergency Response Team will re-enter the affected area when deemed safe and will complete cleanup or mitigation actions.

If an air emission release occurs as a result of a malfunction of a process or control equipment, refer to Section 8.12.2 of this Plan.

The EC or Alternate will notify all appropriate state and local emergency authorities by phone immediately if the preliminary assessment reveals a potential danger to human health or the environment. Also, the National Response Center, the local community emergency coordinator and the State Emergency Response Board must be immediately notified if an accident involves a spill of a hazardous substance equal to or greater than the CERCLA reportable quantity (Table 8-1 list these agencies). Any discharge of a hazardous substance must be reported immediately to the Division of Emergency Government or the WDNR.

The person notifying appropriate authorities shall provide the following information: (NR 664.0056(4)(b))

1. Name and telephone number of person reporting.
2. Name and address of the facility.
3. Time and type of incident (e.g., release, fire).
4. Name and quantity of materials involved, to the extent known.
5. The extent of injuries, if any.
6. The possible hazards to human health or the environment outside the facility.

Additional spill notifications may be required for a diesel fuel spill associated with the emergency back-up power generator if the spill enters a waterway. Refer to the SPCC Plan for details.

8.11.2 Post Emergency Actions

1. Following an emergency, the EC or Alternate will ensure that any waste recovered is properly containerized and prepared for disposal. Recovered hazardous waste will be managed in accordance with applicable government regulations.
2. The EC or Alternate will ensure that no waste potentially incompatible with the released material is stored in affected areas of the facility until cleanup procedures are completed.
3. Immediately following the cleanup, emergency equipment listed in the Contingency Plan will be decontaminated or replaced.
4. The EC or Alternate will ensure that the time, date, and details of any incident requiring implementation of the Contingency Plan are noted in the operating records. Within 15 days of any such incident, the EC or Alternate will submit to the WDNR a written report. The required contents of the written report are listed in Section 8.14, Spill Reporting.
5. The Operations Manager and EC will evaluate the efficiency and effectiveness with which the Contingency Plan was executed and meet with VESTS personnel as well as interested authorities to discuss possible changes. Any subsequent modification of the Contingency Plan will be submitted to the appropriate emergency and regulatory agencies.
6. Refer to the SPCC Plan for additional reporting requirements associated with diesel fuel spills associated with the emergency back-up power generator or other oils located at the facility.

8.12 Incident Response for Handling Contaminated Soil, Surface Water, or Groundwater

Hazardous waste emergency response procedures are dependent upon the specific chemical(s) spilled or otherwise released and whether there is the potential of a fire, explosion, human health danger, or environmental damage. The Emergency Response Guidebook (DOT P 5800.3) specifies emergency response and notification procedures to be taken with any of the listed materials and substances in the U.S. DOT Hazardous Materials Handling Tables. Annual training in the use of this guidebook and associated emergency procedures is given to VESTS personnel involved in hazardous waste management activities at the TSDF. Emergency response team members and transportation personnel will have access to the Emergency Response Guidebook for reference in the event of an explosion, fire, or spill.

Effective and safe response to a chemical spill or release is critical if environmental impact to soils, groundwater, and surface water, as well as personal injury, is to be minimized. Containment of the spill and prevention of further escape of the released material from its source are initial emergency measures, with mitigation and cleanup of any environmental impacts being remedial measures. Containment, mitigation, and safety measures must be based on proper assessment of chemical properties and hazards. The physical state of

released materials primarily affects the manner and rate of escape to the environment (e.g., groundwater, surface water).

8.12.1 Spill Response and Control Measures for Hazardous Solids

Spilled solids will not infiltrate soils, undergo flow, or pose serious air quality impacts unless consisting of fine particulates capable of becoming airborne. Furthermore, these spills ordinarily present minimal problems from the standpoint of containment and cleanup. Containment may be expedited by covering the spill with a tarpaulin or plastic covering. Wetting may help to minimize generation of dust and airborne particulates. However, consideration will be given as to whether the effect of solubilizing the spilled solid may lead to greater hazards due to soil infiltration and subsequent liquid transport to groundwater or surface water sources.

8.12.2 Spill Response and Control Measures for Hazardous Gases

The facility has three potential pathways for the release of hazardous gases or vapors. These pathways include a release from process equipment, a release from a container storing a compressed gas, or through a chemical reaction.

In the event of a malfunction of retort system process equipment or emission control equipment that results in an unpermitted release of elemental mercury, mercury vapor, or other pollutant to the atmosphere the emergency shutdown procedures contained in the MPAP (Appendix EE of the FPOR) will be implemented. Each air emission control device (e.g., bag house units, sulfur-impregnated activated carbon vessels) will remain operational unless the device is the cause of the release or will increase the potential for a further release.

Released gases or vapors from pressurized gas cylinders can rarely be contained and recovered. The chemical properties of the vapors such as corrosively, flammability, and toxicity as well as wind direction, proximity of residential areas, and natural resources potentially affected must be considered in establishing safety measures. Safety measures to be implemented in the event of a release of a gas or vapor may include closing the doors to the storage room, turning off the ventilation system or contacting the fire department when flammable vapors are involved. Since inhalation of airborne toxic or corrosive vapors presents a substantial hazard with many spilled chemicals, respiratory protection is of primary importance. Follow-up investigation and potential remediation of soils may be necessary if deposition occurs.

Released gases or vapors as a result of a chemical reaction may be initially controlled by isolating the container having the reaction. The employee shall evacuate the room and close the doors. Specific follow-up control measures for the gases or vapors residing in the room will be dependent upon the chemical properties of the reaction. The control measure must include an evaluation of the chemical or physical changes that were a result of the chemical reaction.

8.12.3 Spill Response Control Measures - Other Materials

See Table 8-4 for Spill Response Control Measures for other potential scenarios at the site such as responses to spills of hazardous liquids, elementary mercury, compromised containers, and impacts to the storm water drainage network.

8.13 Evacuation Plan (NR 664.0052 (6))

To ensure the protection of human life and prevention of injury, VESTS has developed an emergency evacuation plan for the TSDF and adjoining areas (Drawing D-3). The plan is designed to minimize or eliminate exposure to hazards and provides for orderly removal of personnel or residents from a dangerous area.

If a fire is occurring in the TSDF or adjoining building areas, and it is of such intensity to activate the heat detector systems, the fire alarm bell will sound. However, if the heat detectors do not immediately activate the alarm bell, but it is decided by the EC or Alternate that facility evacuation will be necessary, a fire alarm pull station will be activated to sound the emergency bell.

In the event a potentially dangerous chemical spill occurs in the TSDF, the EC or Alternate will use the intercom system to inform personnel of immediate evacuation. Drawing D-3 identifies the evacuation routes from the TSDF, loading dock, lamp processing, retort operations, laboratory, and office areas, including alternate evacuation routes in cases where the primary routes could be blocked by releases of hazardous waste or fires.

Employees are trained and knowledgeable in evacuation procedures. In the event of an emergency, if an evacuation is necessary, the following procedures will be followed:

8.13.1 Employee Evacuation Rules

1. Machinery and laboratory equipment will be shut off or disconnected. Air emission control equipment associated with the lamp processing and retort ovens and room will remain on unless the equipment is causing the incident.
2. Personnel will evacuate the buildings and affected off-site areas using the nearest evacuation route (Drawing D-3).
3. Personnel will assemble at the electronic gate entrance.
4. Employees will not wait for friends. The EC or Alternate will ensure that the personnel have been evacuated before departing.
5. Employees will move quickly and calmly without panic.
6. Employees will not smoke or strike any open flames.
7. Once in the assembly area, employees will remain calm and quiet while roll call is taken by each supervisor. Employees will report to their supervisors until everyone is accounted for.

8.13.2 Drills and Training

Evacuation drills are held annually to ensure familiarity with escape procedures. Also, each new employee will receive detailed instruction on this Contingency Plan as part of an initial training

program. In addition, periodic staged mock spill drills may be conducted with the PWFD and the Ozaukee County Local Emergency Planning Commission (LEPC).

8.14 Spill Reporting (NR 664.0056 (9))

The owner or operator shall note in the operating record the time, date, and details of any incident that requires implementing the Contingency Plan. Within 15 days after the incident, VESTS will submit a written report on the incident to the WDNR (NR 664.0056 (9)). The report will include the following:

- ◆ Name, address, and telephone number of the owner or operator.
- ◆ Name, address, and telephone number of the affected facility.
- ◆ Date, time, and type of incident.
- ◆ Name and quantity of material(s) involved.
- ◆ Extent of injuries, if any.
- ◆ An assessment of actual or potential hazards to human health or the environment where this is applicable.

Estimated quantity and disposal of recovered material that resulted from the incident.

Refer to VESTS's "Tier I Qualified Facility SPCC Plan" for additional spill reporting requirements for oil spills from the back-up power generator and associated AST containing diesel fuel.

8.15 Amendments to the Contingency Plan (NR 664.0054)

In addition to a mandatory review following the implementation of the Contingency Plan, the Plan will be reviewed and amended whenever the facility changes its design, construction, operation, maintenance, or other circumstances in a way that may change the potential for an explosion, or release of hazardous waste and associated toxic constituents, or changes in the response necessary in any emergency.

The Contingency Plan will also be amended if the plan fails in an emergency, the list of EC or Alternates changes, or the list of emergency equipment changes.

8.16 Description of Contingency Plan Locations (NR 664.0053)

A copy of the Contingency Plan will be kept at the TSDF in the office area. A copy of the Contingency Plan will be located on the facility fence located adjacent to the call box/keypad for the entrance gate. Also, the Contingency Plan will be on file with the PWFD, PWRD, Ozaukee County Emergency Government, Ozaukee County LEPC, Ozaukee County Sheriff's Office, WDNR, and Wisconsin Division of Emergency Government.

8.17 Quick Reference Guide (NR 662.262 (2))

A Quick Reference Guide to the Contingency Plans has been developed as Appendix HH in accordance with s. NR 662.262(2). The Contingency Plan and Quick Reference Guide will be

submitted to the PWFD, PWPD, Ozaukee County Emergency Government, Ozaukee County LEPC, Ozaukee County Sheriff's Office, WDNR, and Wisconsin Division of Emergency Government.

9. Closure Plan (NR 670.014)(2)(m))

The Closure Plan for the TSDF identifies steps that will be necessary to partially close the hazardous waste container storage area (NR 664.0178) and the three retort operations miscellaneous units (NR 664.0601) at any point during their intended operating life, and to completely close the units at the end of its intended operating life. Also, the plan addresses the conditions and reasons under which partial closure would occur.

The facility has no land disposal operations; therefore, the facility can operate indefinitely. For purposes of satisfying NR 664.0112(2)(b) the estimated facility operation life is 30 years, however, this timeframe may be extended as long as the operations provided by the facility are warranted.

A long-term care Closure Plan, as specified under NR 664.0178 is not required for the hazardous waste container storage area since it is not a disposal facility, and all containerized wastes will be removed after final closure is completed. In addition, a long-term care Closure Plan, as specified under NR 664.0603, is not required for the retort operations miscellaneous units since it is not a disposal facility and all the processing equipment will be removed at closure. A drawing showing the facility after closure has not been prepared because the site features and topography will remain the same.

The primary objective of the Closure Plan is to minimize the need for further maintenance of the TSDF after closure of the units and to eliminate any post-closure threat to human health and the environment (NR 664.0111(1) and (2)). A copy of the Closure Plan will be retained as part of the TSDF recordkeeping and furnished to the WDNR until closure of the units are completed and certified.

If VESTS submits a written notification of or request for an operating license modification to authorize a change in this FPOR, facility design, or the approved closure plan, VESTS will also provide a copy of an amended Closure Plan for review or approval in accordance with the provisions of NR 664.0112(3).

9.1 Description of Closure Plan (NR 664.0112(2)(a) thru (e))

9.1.1 General Closure Approach

VESTS will implement the Closure Plan when operations cease at the hazardous waste container storage unit and the hazardous wastes have been removed. The Closure Plan also covers closure activities associated with the ceasing mercury recovery units (retorts) operations. The estimated time for ceasing operations at the TSDF units is approximately 2034 (10 years beyond the renewal period of the units' license). Any modifications to the existing facility equipment structures, construction, or procurements related to the management of the TSDF units will result in VESTS updating the Closure Plan. Removal of hazardous wastes and decontaminating or dismantling equipment in accordance with the approved partial or final closure plan may take place any time prior or after notification of partial or final closure.

Generally, a partial closure is not expected for the overall TSDF during the life of the facility. Partial closure of the TSDF units may occur under the following scenarios:

- ◆ Closure of one of the hazardous waste storage rooms.

- ◆ Discontinuation of the entire retort operations.
- ◆ Discontinuation and no "replacement of a source" for an individual retort unit.

After partial closure of the TSDF, retort operation, or individual retort unit, the other storage rooms or individual retort units will continue to operate. The partial closure could reduce the storage area and the maximum storage capacity. The estimated time required for partial closure will be dependent on the specifications but is estimated to be 120 days. If partial closure becomes necessary, the steps to be completed in accordance with the following procedures for final closure.

9.1.2 Closure Plan Activities

The Closure Plan Activities of the TSDF is divided into two operating units and the other areas of the facility. After closure of the hazardous waste container storage rooms and/or the retort operations, the facility may still operate as a large quantity universal waste handler. The facility may also operate as a destination facility for processing universal waste lamps under NR 673 Subchapter E and the WDNR issued air emissions permit.

The closure activities for the hazardous waste container storage rooms, the retort operations, the lamp processing operations, the HHW collection area, and other areas of the facility are described below.

Following the removal of the process equipment and process residuals, the removal and disposal of various building structures (e.g., ventilation duct work) and porous wall surfaces will be completed. Other abatement methodologies will involve the cleaning of the remaining building surfaces including floors, walls, berms, ceilings, and doors. The cleaning activities will use a "top-to-bottom" type approach; starting at the ceiling of each area in order to ensure that lower surfaces are not re-contaminated by subsequent cleaning efforts on higher surfaces. This cleaning methodology assures that all settled dust will be contained and removed while not being disturbed and entrained into the air. This approach is designed to limit migration of contamination (and dust) to areas outside of the storage facility. Additionally, throughout the decontamination process the storage facility will be fully enclosed with poly-sheet containment barriers and the area will be placed negative (static pressure) with respect to all adjacent areas preventing migration of contamination into other areas of the facility (NR 664.0112(2)(d), NR 666.909(3)(b)).

Waste wash and rinse liquids will be collected and placed in individual 55-gallon drums. Analysis of the waste liquids will be conducted by an outside laboratory to identify potentially hazardous constituents. If the waste cleaning liquids are found to be hazardous, disposal will be completed at a TSDF that is licensed or permitted to accept the waste and employs processes that are in compliance with the land disposal restriction standards contained in NR 668. The effectiveness of the decontamination will be checked by air monitoring and/or wipe tests (with subsequent laboratory analysis) of the representative areas. If such tests reveal that certain contaminants are still present above the closure standards, the decontamination procedures will again be implemented and repeated until the area is deemed safe and nonhazardous.

Waste wash and rinse liquids will be collected and placed in individual 55-gallon drums. Analysis of the waste liquids will be conducted by an outside laboratory to identify potentially hazardous constituents. If the waste cleaning liquids are found to be hazardous, disposal will be

completed in accordance with the requirements of NR 662 at a TSDF that is licensed or permitted to accept the waste and employs processes that are in compliance with the land disposal restriction standards contained in NR 668 (NR 666.909(3)(b)). The effectiveness of the decontamination will be checked by air monitoring and/or wipe tests (with subsequent laboratory analysis) of the representative areas in the storage rooms. If such tests reveal that certain contaminants are still present above the closure standards, the decontamination procedures will again be implemented and repeated until the storage room area is deemed safe and nonhazardous.

Field personnel involved in the cleanup and decontamination will require proper training in hazardous waste handling and safety in accordance with developed Site Health and Safety Plan (HASP). The HASP will outline specific PPE to be used by personnel and may include:

1. SCBA, supplied air respirator, or appropriate full-face cartridge respirator.
2. Chemical resistant protective clothing, including but not limited to, suits, over-boots, and gloves.

PPE will be decontaminated in accordance with the procedures outlined in Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities, 1985, U.S. Department of Health and Human Services, NIOSH Publication No. 85-115 or disposed of. Decontamination rinse solutions will be collected in 5-gallon plastic buckets or 55-gallon steel drums. These waste solutions will be checked for contaminants and hazardous characteristics by an outside analytical laboratory. If necessary, the wastes will be disposed of at appropriate TSDFs.

9.1.2.1 Hazardous Waste Container Storage Unit (NR 664.0178)

The Closure Plan assumes the maximum licensed storage capacity of 20,000 gallons will exist at the time of initiating closure activities (NR 664.0112(2)(c)). The breakdown of the maximum inventory of wastes in storage in the container storage unit at closure is outlined in Appendix Q. At the initiation of closure, a physical inventory of the wastes will be conducted and compared against the TSDF's operating record. During the inventory inspection, the containers will be evaluated for proper labeling and marking. Additional container marking will be added as necessary for shipment to permitted TSDFs. After removal and disposal of all wastes, the storage rooms will be thoroughly decontaminated.

Weekly inspections of the storage room areas' floor, berms, and wall perimeter areas are made as part of the operating requirements. Consequently, cracks or potential areas of leakage from the rooms would be readily detected and rectified. Since these inspections would ensure no hazardous liquid leakage to soils or surrounding surface areas, only the inside structure of the rooms will have to be decontaminated. In addition, after decontamination is completed, the rooms' floor and outside areas will be checked by a professional engineer to certify that no contamination has occurred due to structural defects or damage. The inspection will include checking for any cracks or compromised areas that may allow hazardous waste constituents to escape to the soils or groundwater. Pending the facility evaluation, a subsurface soil investigation and potential remedial actions may be required. Specific action will be conducted in accordance with the requirements of NR 664.0112(2)(d) and (e), as necessary.

The estimated time required for closure of the container storage unit is 180 days. Following the Closure Plan, it is expected that requirements of NR 664.0111 and NR 664.0178 will be met for a hazardous waste container storage unit.

9.1.2.2 Three Retort Operations Miscellaneous Units

The closure activities associated with individual retort units is based on the physical condition and effectiveness of the units. An individual retort may be closed at the end of the mechanical life of the unit and removed from the operating license. The complete removal of a retort oven from service and the license would result in a partial closure. Otherwise, replacement of a retort will be managed as a "replacement of a source" and not subjected to closure. As defined in NR 400.02 (134), a "replacement of a source means the physical dismantling of a stationary source and the substitution of that source with a stationary source which similar in operating capacity and function." The replacement of an individual retort will be through a Class 1 modification to the TSDF license. VESTS is classifying the general maintenance and replacement of retort component parts (e.g., oven heating elements, vacuum pumps) as maintenance activities and not Class 1 modifications.

All process residuals from the retort units undergoing closure will be containerized, labeled, and marked for shipment to a permitted TSDF. If an individual retort oven undergoing closure is still in operating condition, the unit may be sold or transferred to another VESTS location. If the retort is not re-utilized, it will be shipped off site for disposal.

After decontamination is completed, the former retort area floor and outside areas will be checked by a professional engineer to certify that no contamination has occurred due to structural defects or damage. The inspection will include checking for any cracks or compromised areas that may allow hazardous waste constituents to escape to the soils or groundwater. Pending the facility evaluation, a subsurface soil investigation and potential remedial actions may be required. Specific action will be conducted in accordance with the requirements of NR 664.0112(2)(d) and (e), as necessary.

The estimated time required for closure of the three retort operation units is 180 days. Following the Closure Plan, it is expected that requirements of NR 664.0111 and NR 664.0601 to NR 664.0603, will be met for the miscellaneous units as applicable to the retort units.

9.1.2.3 Lamp Processing Operations

The lamp processing equipment is not covered under the TSDF licensing requirements. VESTS recognizes a closure plan under NR 664 Subchapter G is not required for ceasing and discontinuing these operations. However, because NR 664.0110(3)(a) may be applicable, the procedures have been developed for the lamp processing units.

All process residuals from the lamp processing units will be containerized, labeled, and marked for shipment to a permitted TSDF. Lamp processing equipment may be sold or transferred to another VESTS location. If the equipment is not reutilized, it will be shipped off site for disposal.

9.1.2.4 Household Hazardous Waste Collection (NR 666.909)

The permanent HHW collection operations are not covered under the TSDF licensing requirements. However, the HHW operations are covered under NR 666 Subpart HH. The

following closure plan covers the applicable requirements of NR 666.909. Because NR 664.0110(3)(a) may be applicable, the following procedures have been included in the FPOR for the HHW operations.

Initially, containers of HHW will be properly identified, then labeled and marked for shipment to permitted TSDFs. Within 90 days after receiving the final volume of HHW, the volume of waste will be shipped to an off-site TSDF, recycling facility, or another permanent collection facility (NR 666.909(2)(a)).

In accordance with the provisions of NR 666.909(3)(c), within 60 days of the completion of closure, the Operation Manager will submit to the WDNR a report summarizing the activities performed to meet the requirements in NR 666.909(3)(a) and (b).

The HHW operations do not store more than 80,000 pounds of hazardous waste and therefore the financial responsibility requirements of NR 666.910 are not required.

9.1.2.5 Other Facility Operations

The other general operational areas are not covered under the TSDF licensing requirements. VESTS recognizes a closure plan under NR 664 Subchapter G is not required for ceasing and discontinuing these operations. However, because NR 664.0110(3)(a) may be applicable, the procedures in Section 9.1.2 have been developed for these operations.

9.1.3 Closure Standard

The desired end result of the cleaning/decontamination and clearance sampling effort will be to ensure that, upon final closure, the facility will be issued a certification of clean closure with no restriction or reservation with regard to future tenant use. The objective of clean closure is to reduce all contamination to levels at or below the analytical limit of detection. However, cleaning to a "non-detect" standard is extremely difficult to obtain and not necessary for a non-hazardous declaration. The surface wipe closure standards were established in consultation with a third-party consulting engineering firm and reviewed by a Certified Industrial Hygienist. The indoor air quality closure standard is based on information published jointly by the USEPA and Agency for Toxic Substances and Disease Registry (ATSDR) in the report titled *Chemical-Specific Health Consultation, for Joint EPA/ATSDR National Mercury Cleanup Policy Work Group, Action Levels for Elemental Mercury Spills, March 22, 2012*. These closure standards compare favorably (i.e., much more conservative) to OSHA's permissible exposure limits (PEL) and USEPA reference dose limits (RfDs). The closure standards are sufficiently conservative to protect any occupant from an exposure resulting from involuntary surface contact or inhalation (NR 664.0111).

While mercury is the primary pollutant of concern for the TSDF, closure standards for four additional hazardous/toxic compounds have been included, based on current or past usage of these compounds in fluorescent lamps. These compounds and their corresponding closure standards are shown in Table 9-1.

**Table 9-1
Closure Standards**

Sample Type	Pollutant	Acceptance Criteria
Indoor Air Quality [five (5) day passive-badge sample]	Mercury (Hg)	3.0 µg/m ³
Surface Wipe [(10) 100 cm ² composite sample]	Mercury (Hg)	30.0 µg/ft ²
	Cadmium (Cd)	28.0 µg/ft ²
	Chromium (C)	200 µg/ft ²
	Lead (Pb)	100 µg/ft ²
	Yttrium (Y)	1,000 µg/ft ²

cm² = square centimeter
µg/ft² = microgram per square foot
µg/m³ = microgram per cubic meter

Prepared by: EMW1
Checked by: MRK2

9.2 Closure Notification (NR 664.0112(2)(f), NR 664.0112(4)(a), NR 664.0113(2))

In accordance with the provisions of NR 664.0112(4), at least 180 days prior to beginning the closure of the TSDF licensed units, the Operations Manager will notify the WDNR and current users of the facility in writing of the intent to close the facility. In the notification, VESTS will present a schedule for completing the closure of each hazardous waste unit(s) and the final closure of the facility. As outlined in NR 664.0113, within 90 days after receiving the final volume of hazardous wastes, or 90 days after approval of the Final Closure Plan, if that is later, the Operations Manager will have hazardous wastes removed from the facility and disposed at the proper TSDF facilities. Subsequently, the Operations Manager (if a non-emergency closure) will complete all procedures described in the Final Closure Plan within 180 days after receiving the final volume of wastes (NR 664.0113(2)). As stated in this Partial and Final Closure Plans, equipment and structures used in the operation of the TSDF will be decontaminated and residues/rinse solutions properly disposed of (where appropriate) at selected TSDFs (NR 664.0114).

9.3 Closure Certification (NR 664.0115)

In accordance with the provisions of NR 664.115, within 60 days of the completion of closure, the Operation Manager will submit to the WDNR a certification, along with an independent registered professional engineer, that the portion of the facility or the entire facility has been closed in accordance with the specifications in the approved Closure Plan and applicable license conditions. The complete certification requirements are not applicable to the lamp processing operations or the HHW operations.

Documentation supporting the independent registered professional engineer's certification will be furnished to the WDNR upon request until the WDNR releases VESTS from the financial assurance requirements for closure under NR 664.0143(11). Section 10 of the FPOR presents the closure cost estimate and the financial assurance mechanism VESTS will utilize.

10. Closure Cost Estimate and Financial Requirements (NR 670.014(2)(o))

10.1 Cost Estimate for Closure (NR 664.0142(1) thru (d))

In accordance with the Final Closure Plan, VESTS has developed a cost estimate for final closure with a maximum possible storage volume of 20,000 gallons and the mercury recovery/retort operations. The disposal costs are reported on a per unit basis with subtotals indicated in each cost category. Also, administrative and contingency costs and inflation factor cost is included in the total cost estimated. The estimated final closure cost estimate is provided in Appendix Q. The HHW operations are not included in the final cost estimate because not more than 80,000 pounds of hazardous waste is being stored and therefore the financial responsibility requirements of NR 666.910 are not required.

The closure cost estimate is based on a third party closing the units and facility (NR 664.0142(1)(b)). The unit costs for disposal have been obtained from TSDFs licensed to accept and have the capabilities to process the hazardous waste in storage or the process residual from the mercury recovery/retort units, a local remediation contractor with experience in performing mercury cleanup projects, and a third-party consulting firm with experience in closing mercury recovery facilities. The closure costs do not incorporate any salvage value or zero cost for the hazardous waste, non-hazardous waste, structures, equipment or other assets associated with the facility (NR 664.0142(1)(c) and (d)).

During the life of the facility, VESTS will adjust the closure cost estimate for inflation within 60 days prior to the anniversary date of the establishment of the financial instrument to comply with NR 644.0143. The first adjustment will be made by multiplying the closure cost estimate by the inflation factor. This value will become the adjusted closure cost estimate. Subsequent adjustments will be made by multiplying the latest adjusted closure cost estimate by the latest inflation factor.

During the active life of the facility, VESTS will revise the closure cost estimate no later than 30 days after the WDNR has approved the request to modify the closure plan. The latest closure cost estimate will be maintained during the active life of the facility.

The cost estimate of partial closure of the TSDF, retort operations, or individual retorts is covered under the overall Final Closure Plan cost estimate. Therefore, separate partial cost estimates are not developed. If any partial closure activities are implemented, VESTS will update the Closure Plan and closure cost estimate as necessary. No long-term costs are necessary since a long-term care plan is not required for the TSDF.

10.2 Financial Assurance for Closure (NR 664.0143)

VESTS will use one of the methods of proving financial responsibility outlined in NR 664.0143, for covering the total closure cost estimate. VESTS has on file a closure surety bond for proof of financial responsibility needed for closure, which has an effective date of August 6, 2024, in the amount of \$2,236,497.51 (Appendix U).

The closure cost estimate is adjusted annually for inflation. Upon approval of the updated closure plan and associated cost estimate included in Appendix Q, VESTS will provide the WDNR with an updated surety bond.

VESTS understands that within 60 days of the WDNR receiving certification by the owner and an independent registered professional engineer that final closure has been completed, the WDNR will release VESTS of the need to maintain the financial assurance.

11. Pollution Liability Insurance (NR 670.014(2)(q) and NR 664.0147(1))

In accordance with the requirements for coverage for sudden and non-sudden accidental occurrences, VESTS will combine and maintain liability coverage in the amount of \$4 million per occurrence and \$8 million annual aggregate. Appendix Y presents the certificate of insurance for the TSDF (NR 670.014(2)(q)).

VESTS understands that within 60 days of the WDNR receiving certification by the owner and an independent registered professional engineer that final closure has been completed, the WDNR will release VESTS of the need to maintain the liability coverage.

12. Corrective Plan and Financial Assurance Conditions

On June 23, 2020, the WDNR issued a Class 1.1 License Modification Determination (Conditional Approval) to VESTS. The General Condition section (Items 16 through 25) includes requirements for conducting site investigations, development and implementation of Corrective Actions and annual updates, and submitting an annual Financial Assurance Report along with proof of financial responsibility.

12.1 Site Investigation Work Plan and Corrective Action Plan

On February 3, 2020, AECOM submitted to the WDNR's Remediation and Redevelopment Section a Site Investigation Work Plan, which was implemented and completed by December 31, 2020. AECOM submitted the findings of the investigation on February 18, 2021.

AECOM developed and submitted the report summarizing the results of the investigations and based on these results, prepared the CAP dated March 31, 2021. On June 29, 2021, the WDNR responded to this submission with a Notice of Incompleteness and on November 4, 2021, AECOM submitted the CAP dated November 4, 2021. The WDNR sent a conditional approval of this CAP on February 3, 2022.

The CAP provides a description of the corrective actions recommended to address known soil impacts; implement a groundwater monitoring plan to continue to demonstrate no mercury impacts exist on site; implement investigation activities relative to sediment; and the continuation of biannual Incremental Sampling Methodology (ISM) activities. The CAP includes the corrective action schedule with key milestones, milestone dates, and the estimated dates when corrective actions and monitoring will be completed.

By March 1 of each year following the initial submittal of the CAP, VESTS will submit a CAP update (CAPU). The most recent CAP update was submitted by AECOM on behalf of VESTS on March 1, 2024, with a revision date of May 31, 2024, and is included as Appendix GG.

12.2 Financial Assurance for Corrective Action

A licensed professional engineer and professional geologist from AECOM developed, certified, and stamped the cost estimate for implementing the CAP. The cost estimate is based on a third party completing the work, a third party managing and administering the work, includes a 10% contingency, specifies annual costs by task and provides detail costs in tabular format.

By May 1 of each year, VESTS will submit an annual Financial Assurance Report (FA Report). The FA Report will consider WDNR's review comments of the CAPU Report, the estimated costs for remaining work, an adjustment for inflation using the general process and inflation factor specified in s. NR 664.0144(2) Wis. Adm. Code, and an explanation of the reasons for any changes in the cost estimate. The FA Report will be submitted as a stand-alone document.

VESTS establishes proof of financial responsibility for corrective action in at least the amount of the FA Report by June 30 of each year. The current proof of financial responsibility for corrective action is included as Appendix V. A reduction in the dollar amount shall not occur until a license modification in accordance the s. NR 670.042, Wis. Adm. Code is approved. The corrective action cost estimate shall be updated whenever a change in the remaining work or associated costs becomes known to VESTS that increases the corrective action cost estimate

by more than 5%. Proof of financial responsibility reflecting the new cost estimate shall be established within 30 days of the increase.

13. Employee Training

13.1 Introduction

Training is essential to the efficient and safe operation of all facility processes and to rapid and effective responses to emergency conditions. VESTS' policy is that all employees be trained to perform in a manner that emphasizes accident prevention to safeguard human health and the environment.

13.1.1 Initial Training Concept

Each new employee is trained in the general orientation and operation of the facility. A training program related to the specific duties of each job function is specifically tailored for the position. No employee is permitted to work under reduced supervision until the Operations Manager or Alternate has determined that the employee has completed all the tailored training program elements. The introductory training will be completed within six months of the new employee's entry into a specific job (NR 664.0016 (2)). In addition, every employee will participate in, at minimum, an annual review of the initial training (NR 664.0016 (3)) in addition to training to maintain proficiency, learn new techniques and procedures, and reinforce safety and compliance consciousness.

13.1.2 Program Implementation

Implementation of the training program encompasses:

- ◆ Identification of training requirements (for each job);
- ◆ Selection of qualified instructors;
- ◆ Delivery of training program;
- ◆ Employee testing and performance evaluation; and
- ◆ Documentation of each training session.

The training program is the responsibility of the Operations Manager. The Operations Manager, trained in hazardous waste management procedures (NR 664.0016 (1)(b)), selects qualified instructors, participates in the development of the training program content and format, provides the necessary resources, and ensures that employee training records are maintained. The Operations Manager may appoint a Training Coordinator to plan, organize, and control the training programs.

13.2 Position (Job) Descriptions

Training is tailored to prepare the employee to safely and effectively perform the functions of their position and to ensure that the employee will be able to respond effectively to emergencies at the facility. Job descriptions are the key to designing specific training programs because they identify the responsibilities and duties of each position.

13.2.1 Facility Organization

The primary functions of this facility are transportation, storage, and treatment of hazardous wastes, involving properly trained operations personnel. In addition, this broad-based business facility includes general management functions performed by technical support personnel

(e.g., engineers, material handlers, etc.), and administrative staff (e.g., financial, marketing/sales, and clerical).

13.2.2 Staff Positions

Position descriptions, which include essential duties and responsibilities as well as required knowledge, skill, and ability are maintained at the facility's main office for each position related to hazardous waste management. The description of the following job positions contains functions/tasks related to hazardous waste management at the facility.

Job Position	Hazardous Waste-Related Function/Task
Environmental Health & Safety Manager	Conducts training in environmental, OSHA, DOT, site remediation, reactive chemical operations, emergency response, etc., as needed or requested by the facility. Maintain and facilitate modifications to the facility's FPOR. Completes regulatory reports, such as annual non-hazardous waste/hazardous waste reports, Benzene National Emissions Standards for Hazardous Air Pollutants (NESHAP) reports, Toxics Release Inventory (TRI) reports, Subpart BB/CC reports, and other additional reporting.
Environmental Health & Safety Specialist	Conducts, RCRA inspections, training in environmental, OSHA, DOT, reactive chemical operations, emergency response, etc., as needed by the facility. Maintains and facilitates the facility's EH&S programs.
Material Handler I, II, and III	Conducts routine hazardous and non-hazardous waste tasks in relation to the movement of solids and liquids. Responsibilities include loading, unloading, transporting waste material, decontamination of empty drums or containers, and completing paperwork.
Operations Manager	Responsible for overseeing and managing all aspects of the facility including hazardous waste storage, treatment, appropriate disposal, health and safety, compliance with federal and state regulatory agencies, and the hiring, training, and performance management of employees.
Inventory Control Specialist	Manages repack operations in the hazardous waste storage building. These individuals are responsible for packaging and manifesting lab pack containers, updating inventory system information data for accuracy and forecasting purposes, and establishing methods and procedures to efficiently and effectively track the movements of waste materials within the site and off site for disposal.
Operations Supervisor	Managing and supervising all aspects of the facility including health and safety, environmental compliance, variety of services, and the hiring and training of subordinates. Oversees subcontractor project completion in accordance with regulatory guidelines.

Job Position	Hazardous Waste-Related Function/Task
Receiving Lead	Receives paperwork for manifested waste in compliance with all applicable state and federal regulations and provides customer service and support. Signs, dates, and distributes manifests in accordance with state and federal regulations. Ensures load and manifest discrepancies are resolved in a timely manner and in compliance with all state and federal requirements.
Technical Customer Advisor	Provides technical support to customers and VESTS teams, guides chemical grouping, disposal options, approvals, RCRA and DOT regulations, and compliance. Creates new Waste Information Profiles (WIPs) ensuring compliance in accordance with RCRA and DOT regulations. Manages the waste approval process both with internal and third party TSDFs, verifies WIPs and approvals, and resolves any issues and discrepancies to ensure TSDF acceptance and minimal impacts to invoicing.
Technical and Regulatory Specialist	Overseeing the managing, categorizing, planning, scheduling, and movement of incoming hazardous waste materials within the facility for proper disposal and incineration in accordance with environmental regulatory and VESTS standards and guidelines to include the following functions: approvals, quality control, qualitative and quantitative chemical analysis, and customer services to achieve optimal utilization and capacity in the incineration process. Acts in a liaison capacity as a consultant with thermal management personnel at the various sites regarding incineration.

Personnel with the following position titles are either currently employed or involved at this facility; however, these positions are not directly related to hazardous waste functions. Additional position titles may also be added or removed as business conditions dictate.

Accounting Coordinator	Customer Excellence Manager
Administrative Assistant	Human Resource Business Partner
Branch General Manager	Maintenance Mechanic
Controller	

The facility maintains an up-to-date roster of job titles and a comprehensive organizational chart detailing each position. Given the dynamic nature of our operations, the facility's organizational structure and position descriptions are subject to periodic revisions to accommodate operational expansions or modifications. This ensures our organizational framework remains aligned with current operational needs and strategic objectives.

13.3 Training Program (NR 670.14(2)(L))

All personnel employed at this facility, including casual workers, undergo continuing training according to this plan. All new employees, including casual workers, are introduced to the full training and qualification process. New employees will be considered trainees until they have completed an initial training period, which will not be longer than six months in duration.

13.3.1 Scope of Training for New Personnel

Each new employee and casual worker will undergo introductory training composed of general training, job-specific training to varying degrees, and emergency response training (special skills). The amount of training an employee receives depends upon their job duties, other responsibilities such as casualty control, and the employee's knowledge level based on prior experience. This section describes the scope of introductory training, while Section 13.3.2 explains the method for determining the amount of training a new employee will receive.

13.3.1.1 General Training

All trainees complete a series of general training courses to familiarize them with the facility, the Contingency Plan, and basic emergency response skills. These courses ensure that trainees have the basic skills to protect themselves and their fellow employees soon after becoming VESTS employees.

13.3.1.1.1 New Employee Orientation and Basic Safety Training

All trainees undergo orientation and basic safety training to introduce them to VESTS, to the management and operations of the Port Washington facility, to the Contingency Plan (Section 8), and to basic health and safety skills.

This orientation and basic safety training program includes procedures for entering and leaving the facility, facility layout, restricted areas, the nature and characteristics of hazardous wastes, an overview of federal, state, and local regulations, an overview of the facility's receiving, storage and treatment processes, basic personal protection techniques, general and safety rules of the facility, administrative procedures, organizational structure, an outline of the training requirements, and the duties of each employee's job. During orientation, the employee is also thoroughly familiarized with the facility's communications systems, evacuation procedures, and the locations of emergency equipment (NR 664.0016(c)) described in the facility's Contingency Plan.

13.3.1.1.2 General Contingency Plan Training

As discussed in Section 13.3.1.1.1 of this plan, each trainee is familiarized with the facility's Contingency Plan (Section 8) during their orientation and basic safety training session. Training in emergency procedures is provided by the facility's Emergency Coordinator (Section 8.3), the Alternate Coordinator, or other qualified trainers. At a minimum, it includes:

- ◆ Description of possible emergencies;
- ◆ Duties of the Emergency Coordinator and others;
- ◆ Emergency communication and alarm systems;

- ◆ Evacuation procedures and routes;
- ◆ Location of emergency equipment such as alarms, First Aid stations, eye wash stations, safety showers, firefighting equipment, etc.; and
- ◆ Incident/accident reporting mechanism(s).

This instruction consists of classroom instruction (NR 664.0016(1)(a)), followed by a facility walk-through to: 1) point out areas of potential risk; 2) identify what to look for; 3) show where alarms and emergency equipment are located; and 4) demonstrate the alternative routes to be used if an evacuation is ordered. The Emergency Coordinator or other qualified trainer must ensure that each trainee has demonstrated their knowledge of the communication system, evacuation procedures, and location of emergency equipment through a documented evaluation.

13.3.1.1.3 Basic Emergency Response and Preparedness Training

All operations personnel are trained in basic firefighting (e.g., use of fire extinguishers) (NR 664.0016(1)(c)4.). This training is conducted, when possible, with the assistance of local fire department representatives. The training includes special hazards, particularly the hazards created when chemicals stored at the facility come into contact with heat or water.

As part of their training, employees also participate in at least one emergency simulation/evacuation drill annually to practice evacuation of the facility. This allows management and the employees to check the employees' recall of the alarm system and the evacuation procedures and routes.

13.3.1.2 Job-Specific Training

After completing the general training, new employees involved in hazardous waste training are given instructions to address the specific needs of their job functions and to ensure that their work is performed safely and following applicable regulations. A list of required training courses is prepared for each job position by the supervisor responsible for managing the position. The supervisor prepares a Job Position Training Requirements List using the job description, a master list of course possibilities, and advice from the site Training Coordinator. The training matrix (Appendix JJ) identifies the required training courses for each job title/position. The supervisor periodically reviews the required training courses for each job title/position and updates as necessary.

The training matrix courses address these major training topics:

- ◆ Chemical hazard communication awareness expands upon the hazard recognition skills learned during orientation and basic safety training. Based upon job duties, employees learn to identify chemical hazards in their work area, common warning systems used at the facility, sources of data on the chemicals, and handling precautions for the chemicals with which the employees will be working.
- ◆ Personal protection takes employees through the care, use, limitations, and decontamination of the respirators and protective clothing and equipment that are required for their job duties. This training supplements what the employees learned

during general training about basic personal protection techniques and clothing. The employees may also learn how to use eyewash/chemical safety showers and hearing protection if required for their jobs.

- ◆ Regulatory compliance training, appropriate for their job duties, such as manifest preparation, labeling, placarding, and waste acceptance procedures. This training also expands upon the skills learned during orientation.
- ◆ Job-specific operations and maintenance training instruction in those skills that an employee must master to perform their job duties. This training may include coverage of these elements as appropriate for the job duties and to reduce the risk of incidents:
 - Work area/process description and its relationship to other facility units.
 - Process and equipment inspection, routine maintenance, and operation and shutdown during normal and emergencies which also includes, where applicable, operation of built-in controls and/or containment mechanisms such as key parameters for automatic waste feed cut-off systems (NR 664.0016(1)(c)2.).
 - Over-the-road and off-highway mobile equipment inspection, routine maintenance, operations, and safety procedures.
 - Maintenance, including inspection schedules, repair and replacement procedures, minor spill cleanup, and decontamination for processes, equipment, vehicles, and the facility's emergency and monitoring equipment (NR 664.0016(1)(c)1.).
 - Materials handling, loading and unloading, drum handling, and storage.
 - Recordkeeping requirements.

The training matrix and current master job title listing are maintained at the facility and are included as Appendix II and Appendix JJ.

The Operations Manager (or an Alternate, such as the EH&S Manager) reviews and approves the required training courses for each job title/position.

13.3.1.2.1 Special Skills Training

As required, each employee is provided with comprehensive "special skills" training (Appendix JJ). Depending upon their duties, the employees are familiarized with facility emergency procedures, emergency equipment, and emergency response systems. This specialized emergency response training includes the following elements, as applicable:

- ◆ Procedures for inspection, usage, and performing routine maintenance on the facility's emergency equipment;
- ◆ Procedures for using the emergency communication and alarm systems and response duties in the event of fires, injuries, or other incidents;

- ◆ Response procedures for incidents that release hazardous wastes, including spill containment/cleanup procedures to prevent groundwater contamination (NR 664.0016(1)(c)5.);
- ◆ First Aid and CPR; and
- ◆ Casualty control.

For example, at least two employees per shift are trained in First Aid and CPR. This training may be conducted by the American Red Cross, the American Heart Association, YMCA, local fire department, and/or qualified First Aid instructors.

Where appropriate, the employee's emergency response training also includes the application of chemical properties to the understanding and evaluation of potential hazards. These may include vapor density, significance of upper and lower explosive limits, chemical reactivity, and the selection of proper fire extinguishers and protective equipment/clothing.

13.3.2 Training Program Administration

The selection of qualified instructors, the use of effective training formats, and the evaluation of an employee's learning are critical. These considerations are addressed at the VESTS Port Washington facility as described below.

13.3.2.1 Training Personnel Qualifications

VESTS regional management, or the VESTS Corporate Training Officer counsel and provide concurrence on the selection and/or approval of individuals designated by the Operations Manager to conduct specific portions of the training program. The trainers (instructors) are recognized consultants and in-house specialists in the specific fields being taught and have broad experience in hazardous waste management. This actual hands-on experience is important so that the instructor can relate the specific subject area to actual facility operations and can answer employee questions. Specific training may be conducted by an immediate supervisor, department manager, facility safety staff, EH&S Manager or Specialist, or the Operations Manager. Supervisory personnel are encouraged to sharpen their instructional skills by periodically attending classes, seminars, meetings, and workshops at outside institutions or other VESTS facilities. In addition, trainers are assisted by VESTS' regional management and corporate staff in developing effective training programs and teaching aids.

13.3.2.2 Training Formats

Training is conducted in classroom meetings, in small discussion groups, in field exercises, emergency drills, and at an employee's workstation (i.e., on the job). These activities may be supplemented by reading assignments, problem sets, and other teaching aids.

For some classroom training (such as for equipment operators), courses and teaching materials developed by the manufacturer are used, either by arranging for the course to be presented on site, or by sending employees to the manufacturer's factory training sessions. Field demonstrations and practice sessions reinforce skills and promote safety awareness.

The employee's supervisor is responsible for on-the-job training to ensure that the employee learns correct procedures; can perform them accurately, reliably, and efficiently; and is safety

conscious. Corrective action is taken as soon as a deficiency is observed so that the trainee does not develop poor working habits. The employee is assigned increasingly complex duties and/or given greater responsibilities based on demonstrated performance.

13.3.2.3 Training Effectiveness Evaluation

Training effectiveness is measured by written or oral examinations, or by job performance evaluations. The Training Coordinator must enter into the training record that an employee has completed the necessary training successfully (NR 664.0016(4)(d)).

13.3.2.4 Qualification of Trainees for Work Under Reduced Supervision

No employee may perform work under reduced supervision at the facility until they have been qualified as fully trained by the Operations Manager (or a designee, such as the Training Coordinator). Qualification is earned through successful completion of the general training, job-specific training, and special skills training as required by position requirements and the employee's past education, experience, and skills.

The Operations Manager and designees (e.g., the EH&S Manager, Training Coordinator, and the trainee's Supervisor) determine the amount of job-specific and special skills training a new employee needs above and beyond the general training requirements. This determination is based on comparisons of the employee's past employment records with the job position description and its training requirements list. This comparison results in a schedule of the necessary job-specific and special skills courses for the employee. As an employee completes this training, the Training Coordinator updates the employee's Training History Record. This record is reviewed periodically to evaluate the employee's training completion status until all of the required training courses have been completed. Upon completion, the employee is qualified to work under reduced supervision.

Some of the training requirements may be waived by the Operations Manager if the employee can demonstrate competence from prior experience. Proof of competence may include transcripts from academic institutions, certificates of professional or technical course completion, demonstrated job experience elsewhere, or the passage of a performance evaluation such as a written examination.

13.3.2.5 Trainee Feedback

Trainee comments and feedback on the training programs are encouraged throughout the entire training process. These comments are used by the trainers to modify and improve the training program scope, content, and/or format, as appropriate.

13.3.3 Continuing Training

An employee's training does not end with their initial qualification. It never ends as long as the employee continues to work at the facility. Periodic "refresher" training is required and provided, as discussed herein.

13.3.3.1 Frequency of Training

Continuing training is designed to maintain proficiency in job skills, increase safety and quality consciousness, and teach new skills. Such training consists of regularly scheduled:

- ◆ Safety meetings;
- ◆ Annual basic fire extinguisher practice;
- ◆ Annual emergency response exercises;
- ◆ Annual respirator and protective equipment reviews;
- ◆ Annual Contingency Plan refresher training;
- ◆ CPR recertification as required by the American Red Cross or other agency;
- ◆ Qualification of First Aid training as required by the American Red Cross; and
- ◆ Training to teach new skills, new operating procedures, or greater depth in specific areas, as needed.

13.3.3.2 Continuing Training Content

Safety meetings are regularly scheduled for the employees. These sessions are led by the Operations Manager, EH&S Manager, or Alternate, and are assisted by Operations Managers or Supervisors. These meetings are used to educate, communicate with, and motivate employees. The subjects covered may range from a review of safety procedures to presentations on regulatory or policy changes, to discussion of accident prevention goals. The meetings may or may not include performance evaluations.

The biennial fire extinguisher practice is organized by the EH&S Manager, or Alternate, in conjunction with the local fire department. Firefighting practice is scheduled for each operating shift at least once every other year. Additional training aids on the selection and use of portable fire extinguishers may be used to reinforce learned skills.

The annual emergency response review is planned by the EH&S Manager, or Alternate. An emergency incident (e.g., spill, fire, explosion, sudden waste release, facility evacuation) is simulated, and employees respond according to their assigned emergency response duties.

Annual refresher training related to the initial training and the Contingency Plan is required of all employees. This training reviews the site operations and Contingency Plan to update and refresh previous training.

As needed, training is provided to cover any changes in facility procedures or operations and to teach new skills, either before or as such changes occur. Such training enhances the broad waste management skills of management and supervisory personnel. Some of this training may be accomplished by attending adult education classes, college courses, and seminars at off-site institutions.

13.3.4 Documentation of Training

Training records are maintained at the facility. They include a written description of the content of each training session, identify attendees and trainer(s), recount dates of training sessions, and record the signatures of trainers and attendees, thus certifying that the training was accomplished. Each employee has a Training History Record file on site that contains their job

title and description, a training matrix that identifies the training requirements for that description, and appropriate documentation that the requisite training has been completed satisfactorily (NR 664.0016 (4)(a)-(d)). Training documentation for current employees will be maintained at the facility until closure (NR 664.0016 (5)). For at least three years after facility closure, personnel training records will be retained at the corporate offices.

An employee's training history file will be sent to the Operations Manager of any other facility owned/operated by VESTS to which the employee may be transferred (NR 664.0016 (5)). Training files of employees who leave the employment of VESTS will be retained for three years at the last facility where they worked.

13.4 Visitors, Vendors, and Contractors

On-site visitors who do not conduct work will be escorted by a VESTS employee at all times when outside of office areas. In addition, they will be provided with the Visitor Safety Information Sheet which covers the hazards of the facility.

Contractors and Vendors on site to conduct work will be required to participate in Contractor Safety Training on emergency and evacuation procedures, hazards present at the facility, associated facility procedures, and limitations before starting work. This training is then documented and kept on file.

Tables

Table 2-1
Summary of Releases
Veolia ES Technical Solutions, LLC
1275 Mineral Springs Drive, Port Washington, Wisconsin

Date of Release	Released Material	Quantity of Release	Location of Release
December 22, 2003	Lead Acid Batteries (2)	Less than two gallons of sulfuric acid	Trailer
January 19, 2004	Liquid mercury	Two fluid ounces	Trailer
July 14, 2004	PCB Contaminated mineral oil	One pint	Trailer
August 20, 2004	F006 sludge	Less than one gallon	Roll-off box onto asphalt parking lot and concrete pad
July 11, 2005	Liquid mercury	Less than ½ pound	Trailer
September 9, 2005	PCB Contaminated mineral oil	Approximately eight ounces	Concrete pad
February 21, 2006	Flammable paint thinner	Less than one gallon	Trailer
June 21, 2006	Sulfur Acid from Battery	Less than 4 ounces	Battery Accumulation Arca
September 13, 2006	Liquid mercury	Less than 1 ounce	Pod E-4 to Retort Room
September 25, 2006	PCB Mineral Oil (50-499 PPM)	Less than 1 gallon (< 1 pound)	Contained to Freehold Trailer
December 18, 2006	PCB Mineral Oil (83 PPM)- Bushing	Not more than 1.5 gallons (0.000988 pounds PCB)	Concrete Pad
March 26, 2007	PCB Mineral Oil (50-499 PPM)	Less than 8 ounces (<½ pound)	Concrete Pad
May 12, 2008	Mercury	Less than 1 ounce	Pod E-5 (28)
September 3, 2008	Mercury	Less than 1 ounce	Pod E-4, Loading dock area
September 22, 2008	Non-PCB Mineral Oil	Less than ½ gallon	Trailer
September 22, 2008	Mercury	Less than 1 ounce	Wooden crate containing lamps inside the building

Table 2-1 (continued)

Date of Release	Released Material	Quantity of Release	Location of Release
November 8, 2008	Hazardous waste liquid. NOS (D006, D008)	Less than 1 gallon	Trailer, Asphalt Pavement
December 24, 2008	Mercury	Less than 1 ounce	Trailer, Loading dock area
April 10, 2009	PCB Mineral Oil (273 PPM)	Approximately 1 gallon (0.00218 pounds)	Trailer
June 5, 2009	Hydraulic fluid	Two-three gallons	Asphalt pavement
July 9, 2009	Lead acid battery fluid	Less than ¼ gallon	Trailer
October 5, 2009	Non-PCB Mineral Oil	Less than 1 gallon	Trailer, Concrete Loading Dock Pad
May 23, 2011	PCB containing Mineral Oil	Less than 1 pint (<1 pound of PCBs)	Trailer and asphalt pavement
September 11, 2012	F006 Sludge	Less than 0.5 gallons (<RO)	Trailer and asphalt pavement
February 18, 2013	Mercury	Several beads (<RQ)	Trailer, Inside Loading Dock Area
March 28, 2013	Non-Haz Surfactant	10 ounces	Trailer and asphalt pavement
April 25, 2013	Non-Haz Inorganic Reagents	Less than 1 pint	Trailer
June 6, 2013	Non-Haz Inorganic Reagents	Less than 1 pint	Trailer and asphalt pavement
June 25, 2013	Non-Haz Hydraulic Fluid	Less than 8 ounces	Forklift hose and Lamp Room
August 1, 2013	Non-Haz Hydraulic Fluid	25 gallons	Roll-off Truck Hydraulics and asphalt pavement
September 18, 2013	Non-Haz, Non-PCB Mineral Oil	Less than 0.5 gallons	Concrete pad
October 2, 2013	Non-Haz Inorganic Reagents	Less than 1 pint	Trailer
October 12, 2013	R22 Refrigerant - Chiller	1.5 pounds	Chiller Unit
October 25, 2013	Mercury	0.75 pounds (<RQ)	Indoor Pod F-3
October 28, 2013	Mercury	Several beads (<RQ)	Indoor Pod E-2

Table 2-1 (continued)

Date of Release	Released Material	Quantity of Release	Location of Release
February 26, 2014	Mercuric chloride solution	Less than 8 ounces	Inside Storage Room 3, Pod D containment
June 24, 2014	Sodium Hydroxide solution	2 gallons	Trailer and asphalt pavement
June 26, 2014	Mercury	Several beads (<RQ)	Storage Room 3, Pod E containment
July 14, 2014	Organic acid solution	3 gallons	Trailer and asphalt pavement
December 22, 2014	Mercury	Several beads (<RQ)	Asphalt pavement and loading dock area
May 26, 2015	Mercury	Several beads (<RQ)	Storage room I, Pod A containment
July 6, 2017	Mercury	1.54 pounds (vapor)	Flue stack – Wisconsin Retort Oven
June 7, 2018	Battery acid	Less than 1 Quart	Loading Dock

Prepared by: EMW1

Checked by: MRK2

Table 2-2
Summary of Solid Waste Management Units
Veolia ES Technical Solutions, LLC
1275 Mineral Springs Drive, Port Washington, Wisconsin

SWMU	Description of Unit	Location of Unit	When Unit Operated	Specification of Wastes Managed	Past RFI Activities
SWMU #1 Active Unit	Hazardous Waste Storage Rooms consisting of three separate rooms. Refer to Sections 3 and 5 of the FPOR for description details.	South side of Main Building	The rooms were built as an original part of the facility in 1989. The use of the rooms has not changed.	Hazardous and universal wastes are stored in these rooms in containers that range in size from pint up to cubic-yard DOT approved boxes on pallets.	No RFI Activities Required by the WDNR in the 2003 RFA Report.
SWMU #2 Active Unit	South Loading Dock Arca. Four dock doors are located under a roof. The dock area consists of a concrete slab that slopes inward toward the building to a scaled trench.	South side of Main Building	The loading dock was built as an original part of the facility in 1989.	Incoming and outgoing wastes pass through the loading docks. Liquid waste containers are moved from the storage pods to the loading dock before bulking into tanker trucks.	No RFI Activities Required by the WDNR in the 2003 RFA Report.
SWMU #3 Closed Unit	North Loading Dock	Two former loading docks were located in the north side of the Main Building.	Constructed in 1996 as part of a building expansion. In late 1996 or early 1997, the area was enclosed with walls and a roof. In 2001, the area remodeled and currently houses the lamp recycling area.	Prior to enclosure, the loading docks were used to off-load non-hazardous liquid solid waste as part of the solidification process. In 2001 the solidification process was closed.	RFI Activities Required by the WDNR in the 2003 RFA Report. Soil and groundwater samples were collected during the RFI in association with SWMU #7. Findings of the RFI submitted to the WDNR in October 2004. No Corrective Action required for SWMU.

Table 2-2 (continued)

SWMU	Description of Unit	Location of Unit	When Unit Operated	Specification of Wastes Managed	Past RFI Activities
SWMU #4 Moved Unit	Original Lamp Crushing/Processing Machine	Northwestern corner of the original building, current location of the retort operations.	Lamp processing activities began in 1993 in the SWMU #4 location. A new lamp processing line was installed in 1995. The processing line was moved in 2002 to the current location (SWMU #10).	The lamp machine crushed fluorescent light lamps, separated the glass, the phosphor powder, and the aluminum end caps and metal wire. The phosphor powder was collected in drums for processing in the mercury recovery furnaces (SWMU #5). The glass was stored in a roll-off box outside northwest of the building, in the current location of the air emission control equipment and chiller units for the mercury recovery furnaces.	RFI Activities Required by the WDNR in the 2003 RFA Report. Soil samples were collected in association with SWMU #6 during the RFI. Findings of the RFI submitted to the WDNR in October 2004. No Corrective Action required for SWMU.
SWMU #5 Active Unit	Mercury Retort Operations (Miscellaneous Units). Refer to Section 4.5 of the FPOR for details.	Northwestern corner of the original building	Retort processing activities began in 1993. Two units are electric ovens (R1 and R2). These units are scheduled for retirement in approximately March 2014. These units are used to recover mercury from other mercury bearing wastes such as batteries, switches, thermometers, etc. The mercury is driven off as a vapor into three condenser vessels, which are cooled by glycol containing tubes looking through the vessels. The elemental mercury condenses in the vessels.	<p>The retort operations consist of opening containers; sorting, and segregating, and repackaging mercury containing devices and contaminated debris, devices, soils, activated carbon, and mercury compounds into containers, vessels or trays. A total of three retort processing chambers are used. Two of the units (R3 and R4) are natural-gas fired ovens. These chambers are primarily used for mercury-containing phosphor powder, soils, activated carbon, and contaminated metals housings. The mercury is driven off as a vapor to a scrubber and packed tower, where it condenses with water, then is collected in a tank as elemental mercury.</p> <p>The third unit (RS) is also natural gas fired and is scheduled for installation in March 2014. This unit is used for mercury-containing</p>	RFI Activities Required by the WDNR in the 2003 RFA Report. The RFI activities were associated with assessing the soil conditions associated with the roof drains. Findings of the RFI submitted to the WDNR in October 2004. Pending response from WDNR regarding RFI recommendations.

Table 2-2 (continued)

SWMU	Description of Unit	Location of Unit	When Unit Operated	Specification of Wastes Managed	Past RFI Activities
				<p>phosphor powder, soils, activated carbon. Contaminated metals housings, and recover mercury from other mercury bearing wastes such as batteries, switches, thermometers, etc. The mercury is driven off as a vapor into three condenser vessels, which are cooled by glycol containing tubes looking through the vessels. The elemental mercury condenses in the vessels.</p> <p>The mercury from the condenser units is collected in metric ton flasks and shipped off-site as a commercial product.</p> <p>The air emissions from the condenser units and tower are passed through sulfur-impregnated activated carbon to adsorb residual mercury. The spent carbon is drummed and retorted on-site to recover the mercury.</p> <p>The air emissions for the activated carbon vessels then mixes with the fugitive air emission being removed from the retort room. The combined air emission then passes through a large sulfur-impregnated activated carbon vessel located outdoors directly north of the retort room. The air emission from this unit passes out a stack. which is covered and monitored in accordance with a WDNR air permit(s).</p>	

Table 2-2 (continued)

SWMU	Description of Unit	Location of Unit	When Unit Operated	Specification of Wastes Managed	Past RFI Activities
SWMU #6 Moved Unit	Outside Waste Glass Lugger Box Areas	Original location located outside northwest of the former lamp processing room. From 2000-2003 located outside north of the building.	Lamp processing activities began in 1993 in the SWMU #4 location. A new lamp processing line was installed in 1995. The processing line was moved in 2002 to the current location (SWMU #10).	Post lamp recycling silica glass.	RFI Activities Required by the WDNR in the 2003 RFA Report. Soil samples were collected during the RFI. Findings of the RFI submitted to the WDNR in October 2004. No Corrective Action required for SWMU.
SWMU #7 Closed Unit	Solid Waste Solidification Area closed in 2001.	The unit consisted of a waste separation pit and frac tank in the northern most portion of the building. A Maxon Mixer in the main building area.	The non-hazardous solid waste solidification process operated from 1993 to 2001. In May 2001 a closure report from Montgomery Watson was submitted to the WDNR documenting the closure activities.	Non-hazardous liquids were separated from solids in the pit and then pumped to the frac tank. Solids from the pit were mixed with sawdust and disposed of at an off-site landfill. Liquids were solidified by mixture with fly ash in the Maxon Mixer inside the building, prior to being shipped off-site for landfill disposal. Liquids were also run through the process without passing through the pit.	RFI Activities Required by the WDNR in the 2003 RFA Report. Soil and groundwater samples were collected during the RFI. Findings of the RFI submitted to the WDNR in October 2004. No Corrective Action required for SWMU.
SWMU #8 Active Unit	Household Hazardous Waste Storage Area	Located in the eastern portion of the Main Building.	TSDF submitted a plan of operation for this ongoing operation in 1999.	The Permanent Collection Facility accepts household hazardous waste from the local community on Mondays. The HHW is segregated into compatibility groups and packed into DOT approved shipping containers. Some of the HHW is consolidated or commingled into containers in the storage pod rooms and then stored in the rooms (SWMU #1). The HHW is then shipped off-site for treatment or disposal.	No RFI Activities Required by the WDNR in the 2003 RFA Report.

Table 2-2 (continued)

SWMU	Description of Unit	Location of Unit	When Unit Operated	Specification of Wastes Managed	Past RFI Activities
SWMU #9 Active Unit	Trailer 10-day Transfer/Parking Lot Area. The area has been paved with asphalt since the operation began. A concrete pad area is also present.	South side of Property	The unit has existed since the operation began in 1990.	The area is used for a OCB storage trailer and 10-day transfer area for hazardous waste. Roll-off boxes are stored on the concrete pad. The area drains to a catch basin that discharges to a controlled now outfall near the pond north of the building. The area is inspected daily.	RFI Activities Required by the WDNR in the 2003 RFA Report. The RFI activities were associated with assessing the pond sediment adjacent to the outfall. Findings of the RFI submitted to the WDNR in October 2004. No Corrective Action required for SWMU.
SWMU #10 Active Unit	Lamp Crushing/Processing Machines. Details regarding the operations are presented in Section 4.6.1 of the FPOR.	Northern section of the building	Lamp processing activities began in 1993 in SWMU 114 location. The lamp processing activities were moved in 2002 to the current location.	Two straight tube lamp machines crush fluorescent light lamps. separated the glass, the phosphor powder, and the aluminum end caps. The phosphor powder is collected in drums for processing in the mercury recovery furnaces (SWMU #5). The glass is accumulated indoors in a roll-off box. Once the roll-box is full, the box is moved outside to the concrete pad located in the south parking lot area (SWMU #9). The glass is either shipped off-site for disposal or managed by a company as a beneficial reuse product as an abrasive silica glass grit. A compact fluorescent lamp machine is also located in the northern section of the building. The machine separates the electronic base from the glass portion. The electronic bases are accumulated and shipped off-site to an electronics recycling firm. The glass	SWMU #10 has not been confirmed by the WDNR as an active unit (moved from previous location) as part of a RFA process or subjected to RFI activities.

Table 2-2 (continued)

SWMU	Description of Unit	Location of Unit	When Unit Operated	Specification of Wastes Managed	Past RFI Activities
				<p>portion is introduced into straight tube lamp line.</p> <p>The lamp machines are equipped with bag filters and in-line filters to capture particulates. The air emissions pass through sulfur-impregnated activated carbon to adsorb residual mercury. The air emissions from these units pass out stacks, which are covered and monitored in accordance with a WDNR air permit.</p>	
SWMU #11 Active Unit	Recyclable Collection Bin - 2 cubic yards in size.	East of Operations Building	Implemented in 2010.	Commingled recyclables including office paper, plastic bottles and food containers, aluminum beverage cans, metal food cans. The recyclables are shipped off site.	SWMU #11 has not been identified by the WDNR as an active unit (moved from previous location) as part of a RFA process or subjected to RFI activities.
SWMU #12 Active Unit	Non-hazardous solid waste roll-off box area	Inside Northeast Corner of Building	Began operation in 1993 associated with SWMU #7 operations.	Non-hazardous solid wastes accumulated from general facility trash and post retort non-hazardous debris.	SWMU #12 has not been identified by the WDNR as separate active unit (previously part of SWMU #7) as part of a RFA process or subjected to RFI activities.
SWMU #13 Active Unit	90-day Hazardous Waste Accumulation Area	Inside Northern Section of Building	Began operation in this location in 2001.	SWMU #13 is used to accumulate mercury-containing phosphor powder generated during the lamp processing operations; mercury-contaminated water generated from retort operations; mercury-contaminated debris generated from retort operations destined for microencapsulation; post retort non-hazardous solid waste debris;	SWMU #13 has not been identified by the WDNR as separate active unit as part of a RFA process or subjected to RFI activities

Table 2-2 (continued)

SWMU	Description of Unit	Location of Unit	When Unit Operated	Specification of Wastes Managed	Past RFI Activities
				and post retort commercial product phosphor powder meeting the TCLP and LDR mercury levels and destined of rare earth element recycling.	

Prepared by: EMW1
Checked by: MRK2

**Table 8-1
Emergency Contacts**

**Veolia ES Technical Solutions, LLC
1275 Mineral Springs Drive, Port Washington, Wisconsin**

Emergency	Organization/Agency	Emergency No.
Personal Injury	Port Washington Fire Dept.	911
	Aurora Medical Center 975 Port Washington Road Grafton, WI 53024	(262) 329-1000
	Asension Hospital Ozaukee 13111 N. Port Washington Rd. Mequon, WI 53097	(262) 243-7300
On-Call Emergency Coordinators:		
Emergency Response Team	Veolia ES Industrial Services. LLC	(800) 688-4005
Fire/Explosion	Port Washington Fire Dept.	911
	Port Washington Police Dept. (Primary Emergency Response Authorities)	911
	Ozaukee County Sheriff's Dispatch Center	911
Hazardous Spill Release Contractors	Veolia ES Industrial Services. LLC	(800) 688-4005
Emergency Government and Response Agencies	CHEMTREC	(800) 424-9300
	National Response Center (NRC)	(800) 424-8802
	Ozaukee County Emergency Government	(262) 284-8397
	Wisconsin Dept of Natural	(800) 943-0003
	Resources/Wisconsin Dept. of Administration – Division of Emergency Government	(608) 267-7454
Non-Emergency	Ahern Fire Protection (Halon Fire Suppression System and Sprinkler System)	(262) 252-5921
	Honeywell (HSM Security (Fire Alarm Panel)	877-476-4968
	Rinderle Door Company (Roll-up Fire Doors)	(262) 662-5200
	Miller Electric	(262) 284-2646
	J & H Heating	(262) 284-5589
	Wisconsin Electric Power Company (Account 3614-316-678)	800-662-4797
	Wisconsin Gas Company (Account 5618-446-080)	800-261-5325
	AXA Matrix Risk Consultant	937-886-0000

EMERGENCY PAGER
920-576-1673

Table 8-2
Wastes and Associated Hazards
Veolia ES Technical Solutions, LLC
1275 Mineral Springs Drive
Port Washington, Wisconsin

Waste	Hazard	Basis for Hazard Designation
Spent Solvents and Solvent Mixtures. Including: Acetone Benzene (D018) 1 – Butanol Chlorobenzene Cumene Cyclohexane Ethane Ethyl Alcohol Ethyl Acetate Ethyl Cellosolve Acetate Ethyl Ether Heptane Hexane Isobutyl Alcohol Isopropyl Acetate Isopropyl Alcohol Methyl Alcohol Methyl Ethyl Ketone (D035) Octane Pentane Toluene Xylene (D001, F003, F005) 2,4-Dinitrotoluene (D030) Nitrobenzene (D036) Pyridine (D038)	Ignitable Toxic	These wastes may have a flash point less than 140°F making item ignitable (D001). These wastes may be or contain acetone, ethyl acetate, N-butyl alcohol, cyclohexanone, and/or xylene which are listed ignitable wastes (F003). These wastes also may be or contain methyl ethyl ketone, methyl isobutyl ketone, and/or toluene which are listed ignitable and toxic wastes (F005).
Spent Oils, Including Fatty and Petroleum Byproducts (D001)	Ignitable, TCLP Toxic	These wastes may have a flash point less than 140°F making item ignitable (D001). These wastes may also contain toxic levels of chromium (D007) and/or lead (D008). A prequalification sample of each generator's waste oil will be tested for lead and chromium TCLP Toxicity as well as retested prior to each off-site shipment of a nonhazardous oil reclaimer.
Spent Acids and Acid Mixtures. Including: Formic Acid Selenic Acid Hydrochloric Acid Nitric Acid Sulfuric Acid Phosphoric Acid Hydrofluoric Acid Acetic Acid (D002)	Corrosive (Acid)	These wastes have a pH value less than 2 making them corrosive (D002). Selenic acid may also be TCLP toxic for selenium.
Spent Alkaline Solution and Solids Mixtures. Including: Calcium Oxide Calcium Hydroxide Potassium Hydroxide Sodium Hydroxide Lithium Hydroxide (D002 and D002/D003)	Corrosive (Base), Reactive	These wastes may have a pH value greater than 12.5 making them corrosive (D002). Also, such wastes may contain sulfides or cyanides; or they may react strongly with water (D003).

Table 8-2 (continued)

Waste	Hazard	Basis for Hazard Designation
Cyanide and Sulfide bearing wastes. Including: Toluene Diisocyanate Chlorophenyl Isocyanate Sodium Cyanide Silver Cyanide Methyl Cyanide Ammonium Sulfide Dimethyl Sulfide Potassium Sulfide Sodium Sulfide (D001 and D003)	Reactive, Toxic, Flammable	These wastes may generate toxic gases on contact with water (D003), and/or may have a flash point less than 140°F (D001), and/or may be capable of causing a fire through friction, absorption of moisture of spontaneous chemical change.
TCLP Toxic Waste Mixtures. Including: Arsenic Barium Cadmium Chromium Lead Mercury Selenium Silver (D004 through D011)	TCLP Toxic (Metals)	These wastes exhibit the characteristics of TCLP toxicity as defined in 40 CFR 261.24(a).
Waste Pesticides or Mixtures. Including: Dieldrin Endrin Lindane Heptachlor (D031) Methyl Parathion Parathion Toxaphene 2,4-D 2,4,5-TP Silvex Diazinon (D012 through D0017) Chlordane (D020) Pentachlorophenol (D037) Trichlorophenols (D041 and D042)	Toxic and TCLP Toxic Pesticides	The TCLP toxic pesticides are specifically identified in 40 CFR 261.24. The many toxic pesticides are identified in 40 CFR 261.33. They may be mixtures around in spill residue or cleanup debris.
Halogenated and Miscellaneous Mixtures. Including: Chloroform (D022) Hexachloroethane (D034) o-Dichlorobenzene 1,1-Dichloroethylene (D029) m-Dichlorobenzene p-Dichlorobenzene (D027) Dichloromethane (D028)	Toxic (poisonous fumes when heated to decomposition)	These wastes may be or contain tetrachloroethylene, o-dichlorobenzene, dichloromethane, trichloroethylene, 1,1, trichloroethane, 1,1,2-trifluoroethane and/or trichlorofluoromethane which are listed as toxic wastes (F002).

Table 8-2 (continued)

Waste	Hazard	Basis for Hazard Designation
Hexachlorobenzene (D032) Hexachlorobutadiene (D033) Perchloroethylene (D039) Trichloroethane (D040) Trichloroethylene Trichloro-fluoromethane (F001 through F002) Carbon tetrachloride (D019) Cresoles (D023, D024, D025, D026) Vinyl chloride (D043)		
Flammable Solids. Including: Sodium Metal Lithium Metal Magnesium Metal (D001 and D003)	Flammable, Reactive	These wastes are capable of causing a fire through friction, or by absorption of moisture, or by spontaneous chemical change.
Reactive Materials. Including: Acetyl Chloride Anisoyl Chloride Aluminum Chloride Methyl Dichlorosilane Stannic Chloride Trichlorosilane (D001, D002, and D003)	Reactive, Flammable, Corrosive, Toxic	These materials may react violently with water or from explosive materials with water. These materials may also generate toxic, corrosive or flammable vapors and generate heat when in contact with water.
Toxic materials. Including: Vanadium Oxide Thallium Sulfate Methyl Hydrazine Chloroacetaldehyde Beryllium Dust	Toxic	These wastes pose immediate and extreme danger to human health.
Oxidizers. Including: Sodium Nitrate Potassium Nitrate Sodium Perchlorate Potassium Permanganate (D001)	Oxidizer, Flammable	These wastes can release oxygen and product heat to stimulate fire upon contact with combustible and flammable materials.
Poison Gases. Including: Bromacetone Phosphine Phosgene	Acute Poisons	Poisonous gas, or vapor of liquid that is an immediate and extreme danger to human health.

Table 8-2 (continued)

Waste	Hazard	Basis for Hazard Designation
Poison Liquids/Solids. Including: Pesticides Cyanides Organic Poisons Inorganic Poisons Metal Poisons	Acute/Chronic Poisons	Poisonous solids, liquids, or vapor of liquids that are an immediate danger and/or long term hazard to human health.
Toxic Solids/Liquids. Including: Organic Toxics Pesticides Hydrogen Sulfide Hydrogen Flouride Mercury Mercury Compounds Lead Compounds Selenium Compounds	Chronic Toxics Corrosive (Acid) Corrosive (Base) Oxidizer	Toxic solids, liquids, or vapor of liquids that are long term health hazards. Metal compounds in solutions may have additional hazards associated with corrosivity.
Mercury Contaminated Solids/Liquids. Including: Spill Cleanup Debris Contaminated Soils Activated Carbon Contaminated Waters PPE Phosphor Powder	Chronic Toxics	Toxic solids, liquids, or vapor of liquids that are long-term health hazards.
Mercury Containing Devices. Including: Thermostats Thermometers Thermo Couplers Switches Relays Fluorescent Lamps Neon Lamps HID Lamps	Chronic Toxics	Toxic effects from mercury vapor contained in devices can result in long term health hazards.

Table 8-3
Equipment and Systems for Emergency Response
Veolia ES Technical Solutions, LLC
1275 Mineral Springs Drive, Port Washington, Wisconsin

Protective Gear and Decontamination Equipment	
Item	Capabilities
Knee-High Vinyl Boots with Steel Toe and Shank	Protect foot and leg from physical injury and skin absorption of corrosive or toxic materials.
Vinyl gloves and Latex Gloves	Hand protection against corrosive and toxic materials.
Goggles	Eye protection against chemical splash, fumes, and burns.
Safety Glasses	Eye protection against chemical splash, fumes, and burns.
Face Shields	Face protection against chemical splash, fumes, and burns.
Hard Hats	Head protection against falling objects and use of heavy equipment.
Full Face Cartridge Respirators	Protect against corrosive fumes, mercury vapors, organic vapors, hazardous dusts and mists, chemical splash and burns (use only as specified by Operations Manager and reference to Field Safety Manual tables.)
Chemical Resistant Tyvek Suits	Body protection against chemical splash, vapor, and burns.
Self-Contained Breath Apparatus (SCBA)	The MSA self-contained breathing apparatus is designed to provide maximum mobility and approximately 30 minutes of breathable air to personnel. The apparatus provides personnel with reparatory protection while performing work in objectionable and unbreathable toxic atmospheres regardless of concentration or oxygen deficiency. The breathing regulator is equipped with sufficient time for egress from the hazardous area. The apparatus is approved by the National Institute of Occupational Safety and Health (NIOSH) and Mining Enforcement and Safety Administration (MESA).
Hood Style Supplied Air Respirators	The TSDf operates a supplied air respirator system designed to provide a continuous supply of breathable air to personnel. The device permits the wearer to work and move about freely, within the limits of the approved hose length. The maximum hose length is 300 feet. The maximum inlet pressure is 125 psig. Normal operating pressures should be between 60-90 psi. The use of hood style supplied air respirators is not authorized of use in IDLH environments.

Table 8-3 (continued)

Protective Gear and Decontamination Equipment	
Item	Capabilities
Scoop Shovels	Used in digging trenches for preventive measures against chemical spills or clean-up of debris in TSDF and loading dock area.
Bags Vermiculite Absorbent	Dry absorbent used for constructing temporary spill control dikes or absorbing spilled hazardous liquids.
Rolls Plastic Tape	Sealing of joints on protective gear, e.g. boots, gloves.
5-Gallon Plastic Buckets	Drop containers for gloves, boots, clothing, and tools requiring disposal of decontamination; waste decontamination solution container.
Plastic Drop Cloths (4 ft x 6 ft)	Drop sheet for field operations tools or protective equipment requiring decontamination.
Decontamination Soap Solutions (1 Gallon)	For cleaning and decontaminating protective equipment and tools.
Long-Handle, Soft-Bristle Scrub Brushes	For scrubbing and decontaminating protective equipment and tools.
55-Gallon Open-Head Steel Drums	Retain waste decontaminating protective equipment and tools.
85-Gallon Open-Head Steel Drums	Overpacking of leaking 55-gallon drums for spill mitigation.

* Location of all protective gear and decontamination equipment is in emergency response material room, as shown on Drawing D-3. Vermiculite, 55-gallon and 85-gallon open-head steel drums are stored in designated storage trailers.

** All SCBA, respirators, gloves, boots, suits, etc. will be thoroughly decontaminated after a response incident is completed. Soap and water solution will be used to decontaminate the equipment. If any equipment or protective clothing is excessively contaminated, damaged, or permeated from toxic or corrosive wastes, the items will be discarded and properly disposed. Vinyl boots and gloves, and Tyvek protective suits were selected as chemical-resistant gear since these materials offer the best protection when handling a diversity of corrosive or toxic wastes. Use of respirators and SCBA, or other protective equipment for response to any emergency incident, will be determined by the Emergency Coordinator as well as proper selection understood by Emergency Response Team members (as part of Field Safety Training program).

Description of Internal and External Alarm Systems		
Item	Capabilities	Location
20-Pound ABC Fire Extinguishers	Multipurpose dry chemical extinguishers ammonium phosphate base for class A-B-C fires. Range: 20 feet for Class A fires 120 feet for Class B-C fires	Conspicuous locations throughout the facility.
10-Pound ABC Fire Extinguishers	Multipurpose dry chemical extinguishers ammonium phosphate base for A-B-C fires. Range: 4 feet for Class A fires.	Conspicuous locations throughout the facility.

Table 8-3 (continued)

Description of Internal and External Alarm Systems		
Item	Capabilities	Location
	60 feet for Class B-C fires	
Halon 1301 Fire Extinguishing System	Multipurpose, low-pressure liquefied gas extinguishant (Bromochlorodifluoromethane) than can spread over subrooms in 10 to 25 seconds.	Network system located throughout Storage Rooms 1, 2, and 3.
30-Pound D Fire Extinguishers	Specific dry powder extinguisher for metal fires, e.g., sodium or magnesium. Covers about 5 to 25 feet in 10 to 25 seconds. Class D Fires.	Near entrance walkway to Storage Room 1 subroom, Retort Room, and adjacent to the Northeastern door exit.
Water Sprinkler System	System will be comprised of network lines and discharge outlets each with a temperature rating of 165°F. Water supply hydrostatic pressure of 100 psi. A water flow release will activate the fire alarm system.	Sprinkler system distributed throughout facility and offices. Controls of system in office/laboratory area.
Automatic Fire Protection Units	Activation of compatible two wire detector or any normally open fire alarm initiating device will sound the audible devices, trip a municipal box, notify a remote station, annunciate a fire zone, and energize supplementary relays.	Units located in the loading dock area (east wall) for the Halon 1310 Fire system and Water Sprinkler system. Signal from these units feed an outgoing signal panel located on the east wall of the facility, just north of the eastern overhead door. The outgoing signal panel is monitored by Stanley Security.
Heat Detector for TSDF subrooms, part of Automatic Fire Protection Units.	Combination of rise and fixed temperature heat detector activated by temperatures about 145°F.	Central location of Storage Rooms 1, 2, and 3 (20-foot radius).
Halon 1301 Fire Extinguishing System	The fire suppression system would be part of the Automatic Fire Protection for alarm activation during a fire potential warning or actual fire occurrence in Storage Rooms 1, 2, and 3.	Halon suppression system located throughout Storage Rooms 1, 2, and 3.

Table 8-3 (continued)

Description of Internal and External Alarm Systems		
Item	Capabilities	Location
Automatic Fire Protection Units	Activation of compatible two wire detector or any normally open fire alarm initiating device will sound the audible devices, trip a municipal box, notify a remote station, annunciate a fire zone, and energize supplementary relays.	Units located in the loading dock area (east wall) for the Halon 1310 Fire system and Water Sprinkler system. Signal from these units feed an outgoing signal panel located on the east wall of the facility, just north of the eastern overhead door, The outgoing signal panel is monitored by Stanley Security.
Heat Detector for TSDF subrooms, part of Automatic Fire Protection Units.	Combination of rise and fixed temperature heat detector activated by temperatures about 145°F.	Central location of Storage Rooms 1, 2, and 3 (20-foot radius).
Halon 1301 Fire Extinguishing System	The fire suppression system would be part of the Automatic Fire Protection for alarm activation during a fire potential warning or actual fire occurrence in Storage Rooms 1, 2, and 3.	Halon suppression system located throughout Storage Rooms 1, 2, and 3.

Table 8-4
Spill Response Control Measures – Other Materials

Veolia ES Technical Solutions, LLC
1275 Mineral Springs Drive, Port Washington, Wisconsin

Spill Type	Hazard(s)	Response	Mitigation
Released Liquids	<ul style="list-style-type: none"> ◆ Generation of airborne vapors that may be flammable or combustible presenting a danger of ignition and/or explosion ◆ Infiltration/contamination of soils ◆ Transported by groundwater/surface water 	<ul style="list-style-type: none"> ◆ Avert cause for fire or explosion ◆ Construct a dike of absorbent material or construct trenches of soil, vermiculite, or other inert material to contain liquid spill ◆ Construct subsurface containment (trenches, in-ground dikes, wells, and drainage fields) of contaminated soil/sediment ◆ If liquid can be recovered by pumping, an impermeable earthen material (such as clay) can be used for dike material ◆ NOTE: The addition of water to a spill is usually not advisable because the chemical may be discharged into sewers and surface waters. A mixed aqueous solution may increase the surface mobility of the spill and its rate of soil infiltration. In addition, the substance may be incompatible with water. 	<ul style="list-style-type: none"> ◆ Vapor suppression via firefighting foam (insoluble in spilled material) ◆ Excavation of contaminated soil into DOT Approved drums ◆ Add lime to neutralize an acid spill.¹ ◆ Add nonhazardous, soluble iron salts (e.g. ferrous sulfate) to spills of cyanide solution.² ◆ Proper disposal/treatment of hazardous residues
NOTE: The back-up power generator has a 793-gallon capacity aboveground storage tank (AST) containing diesel fuel and is located beneath the generator unit. The generator and the AST are situated on top of a manufactured built secondary contaminant pad with a spill capacity of 1614 gallons. Oil dry and absorbent pads are available to contain any spills during filling the AST. A "Tier I Qualified Facility SPCC Plan" has been developed for the AST.			
Elemental Mercury	<u>PPE FOR ALL MERCURY SPILL CLEANUP MUST BE AT LEAST LEVEL C (Respiratory Protection, Chemical Resistant Clothing, Gloves and Boots, Hard Hat and Face Protection (if wearing a half-mask respirator).)</u>		

Table 8-4 (continued)

Spill Type	Hazard(s)	Response	Mitigation
		<ul style="list-style-type: none"> ◆ Vacuum up, by using an approved mercury vacuum, or aspirate up gross amounts of free visible metallic mercury. ◆ Use merc-sorb amalgam powder, if appropriate, to complex the mercury into an amalgam, recover amalgam and place into a sealed container. ◆ Re-vacuum all hard surfaces after removal of items listed above. ◆ Using Hg X wash solution or a high phosphate base (pH above 7), wash the areas and clean water rinse. Recover this final wash with a clean dry mop, rag. ◆ Let the area dry and inspect the area for any residual contamination missed. If any is found, repeat steps 1-6 above. 	<ul style="list-style-type: none"> ◆ Place free product mercury from aspirator and vacuum collection canister into mercury flask (proper DOT shipping container). ◆ Recover any visibly contaminated articles that cannot be cleaned and will require removal, such as cloths, cardboard, or other porous materials, and place into a sealed container.
<p>Container Spills/Leakage (and Compromised Containers i.e. holes, missing bungs, and stripped threads at bung closures)</p>	<ul style="list-style-type: none"> ◆ Hazards of the chemical involved will be initially determined to ensure appropriate PPE is used for corrective actions. 	<ul style="list-style-type: none"> ◆ Place drum on its side if appropriate with the leak upward so that the flow is immediately stopped. ◆ Prior to transfer, the container must be properly sealed or overpacked before being transported or stored in the TSDF. ◆ If contents cannot be made shippable, transfer to a secure container by use of a mechanical or hand pump. ◆ If it is not feasible to safely transfer the contents to another secure container or small leakage cannot be quickly alleviated, the small leaking container must be overpacked. 	<ul style="list-style-type: none"> ◆ Emergency overpacks are 85-gal open-head drums into which an entire 55-gal drum can be placed and enclosed. ◆ Smaller leaking containers, such as 5-gal cans) may be overpacked in 55-gal open-head drums.³

Table 8-4 (continued)

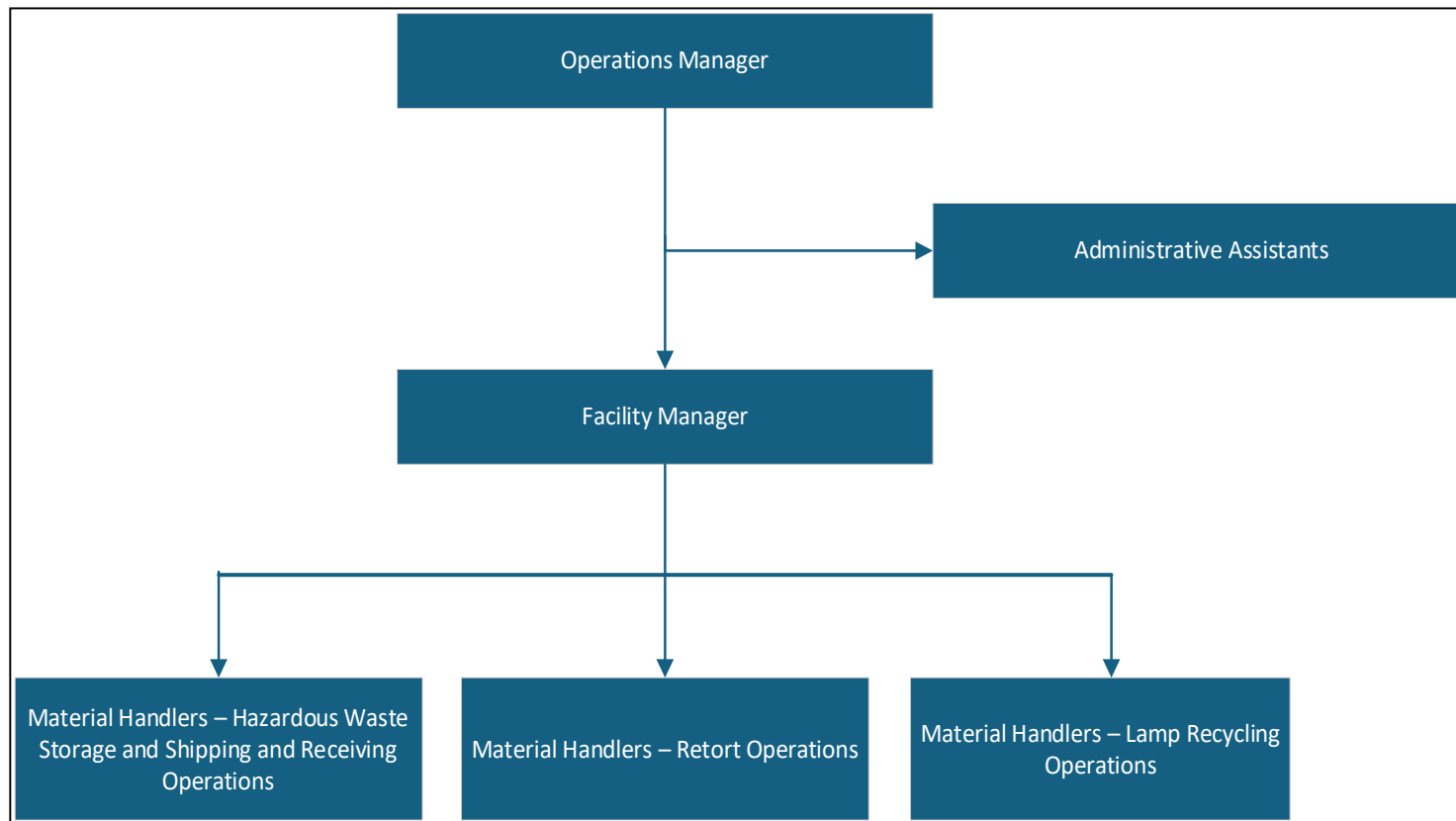
Spill Type	Hazard(s)	Response	Mitigation
Spills to Storm Water Drainage Network		<ul style="list-style-type: none"> ◆ Contain lateral movement by constructing a berm using absorbent. ◆ Cover collection basin and storm water drains with a plastic sheet and building a dike of absorbent material around them. ◆ If spill enters the storm water drainage network, ensure the valve closed (Refer to Drawing D-2). 	<ul style="list-style-type: none"> ◆ Clean the network using a vacuum system. Note: an emergency services company will provide the vacuum system (vac-truck). ◆ Flush using a decontamination solution. ◆ Manage the spilled material and decontamination solution as a hazardous waste. ◆ Test the decontamination solution to determine that the rinse is not a regulated waste.

¹ Add Calcium carbonate lime (powdered limestone) for this purpose rather than slaked lime (calcium hydroxide) because the latter is highly caustic and, if over-applied, will result in alkaline contamination (even if the acid is neutralized).

² This converts the free cyanide to a ferricyanide complex (or ferricyanide if ferric iron salt is added) which presents a considerably lower order of hypochlorite than free cyanide. Solutions of oxidizing agents, such as hydrogen peroxide or sodium hypochlorite, may also be effective in destroying free cyanide, although these are hazardous materials themselves.

³ Caution will be used in overpacking so that a leaking drum is not excessively stressed, possibly inducing a spill. Lifting a leaking drum into an overpack necessitates the use of a forklift or other hydraulic equipment. Handling in this manner, though, may cause further rupture of the drum or splash the contents. The potential for ignition or explosion of flammables is additionally increased. Safe methods will be devised depending on the location and type of leak.

Figure



VEOLIA ES TECHNICAL SOLUTIONS, LLC

**FIGURE 4-1
MANAGEMENT STRUCTURE**

Date: MARCH 2025

Revision Date: MARCH 2025

Drawn By: JEF1

Checked By: MMB2

Project: 24V007



Drawings



NOTES:

1. Base map supplied by client.
2. EPA ID#: WID988566543
3. Latitude 43.37165 Longitude -87.88824
4. Topographic contour interval is two feet.

This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.



VEOLIA ES TECHNICAL SOLUTIONS, LLC

DRAWING D-1

EXISTING CONDITIONS
1275 Mineral Springs Drive
Port Washington, WI 53074

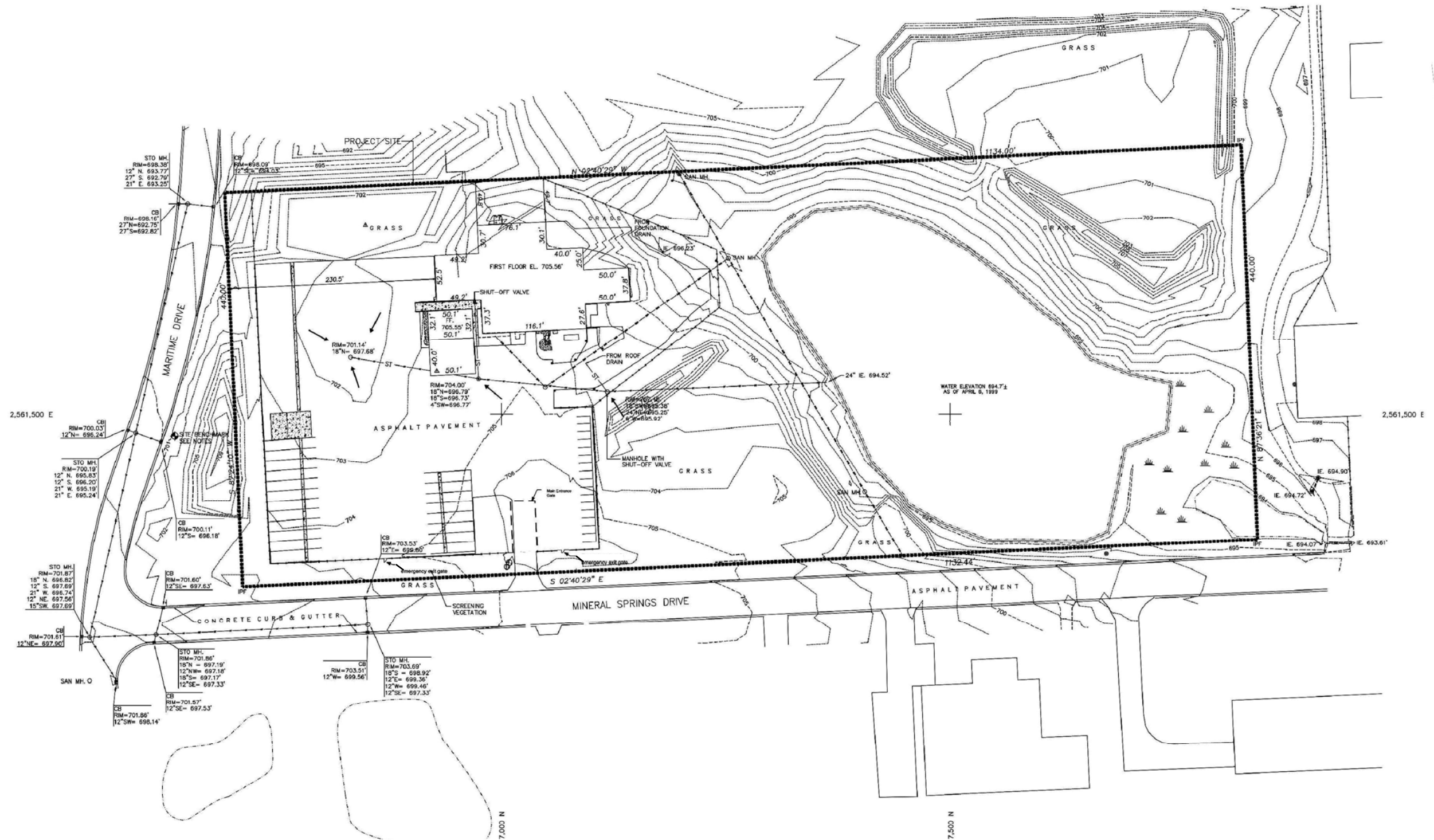
Date: MARCH 2025

Revision Date:

Drawn By: DAT

Checked By: MMB2

Project: 24V007



NOTES:

1. Base map supplied by client.
2. EPA ID#: WID988566543
3. Latitude 43.37165 Longitude -87.88824

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LEGEND

●	STORM SEWER VALVE	-----	APPROXIMATE PROPERTY BOUNDARY
○	MANHOLE	-----	1' CONTOUR
■	CATCH BASIN	-----	5' CONTOUR
→	SURFACE WATER FLOW	-----	SANITARY SEWER
		-----	STORM SEWER
		-----	CHAIN LINK FENCE
		-----	EDGE OF WATER
		-----	CONCRETE SURFACE
		-----	GRAVEL SURFACE



VEOLIA ES TECHNICAL SOLUTIONS, LLC

DRAWING D-2

SITE FEATURES
1275 Mineral Springs Drive
Port Washington, WI 53074

Date: MARCH 2025

Revision Date:

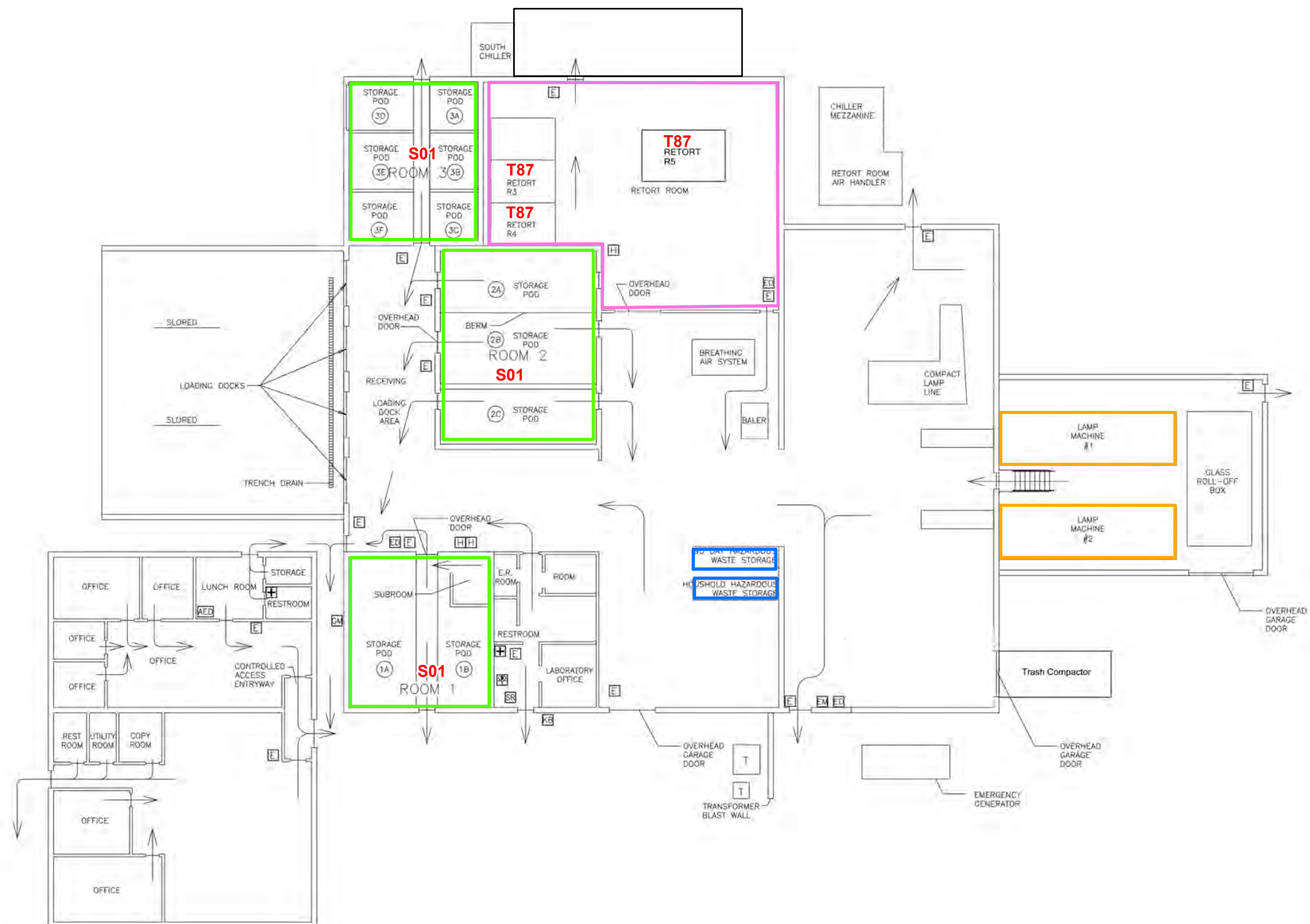
Drawn By: DAT

Checked By: MMB2

Project: 24V007

LEGEND

	GAS MAIN
	ELECTRICAL MAIN
	FIRE EXTINGUISHER
	TYPE D FIRE EXTINGUISHER
	SPRINKLER RISER SYSTEM
	TRANSFORMER
	HALON SYSTEM
	AUTOMATED EXTERNAL DEFIBRILLATOR
	FIRST AID EQUIPMENT
	EYEWASH/SAFETY SHOWER
	KNOX BOX LOCATION (FACILITY KEY)
	EVACUATION ROUTE
	PROPOSED UNIVERSAL WASTE STORAGE FACILITY AREAS
	EXISTING HAZARDOUS WASTE STORAGE FACILITY AREAS
	DOUBLE STACKED DRUMS (SET OF 8 TOTAL)



NOTES:

1. Base map supplied by client.
2. EPA ID#: WID988566543
3. Latitude 43.37165 Longitude -87.88824

Process Codes

- S01** = Container Storage
T87 = Smelting, Melting, or Refining Furnace

- Green Outline** Hazardous waste permitted storage areas
Blue Outline Household hazardous waste storage areas
Orange Outline Hazardous waste phosphor powder storage areas
Pink Outline Hazardous waste generation from mercury recovery operations

This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.



VEOLIA ES TECHNICAL SOLUTIONS, LLC

DRAWING D-3

FACILITY LAYOUT
1275 Mineral Springs Drive
Port Washington, WI 53074

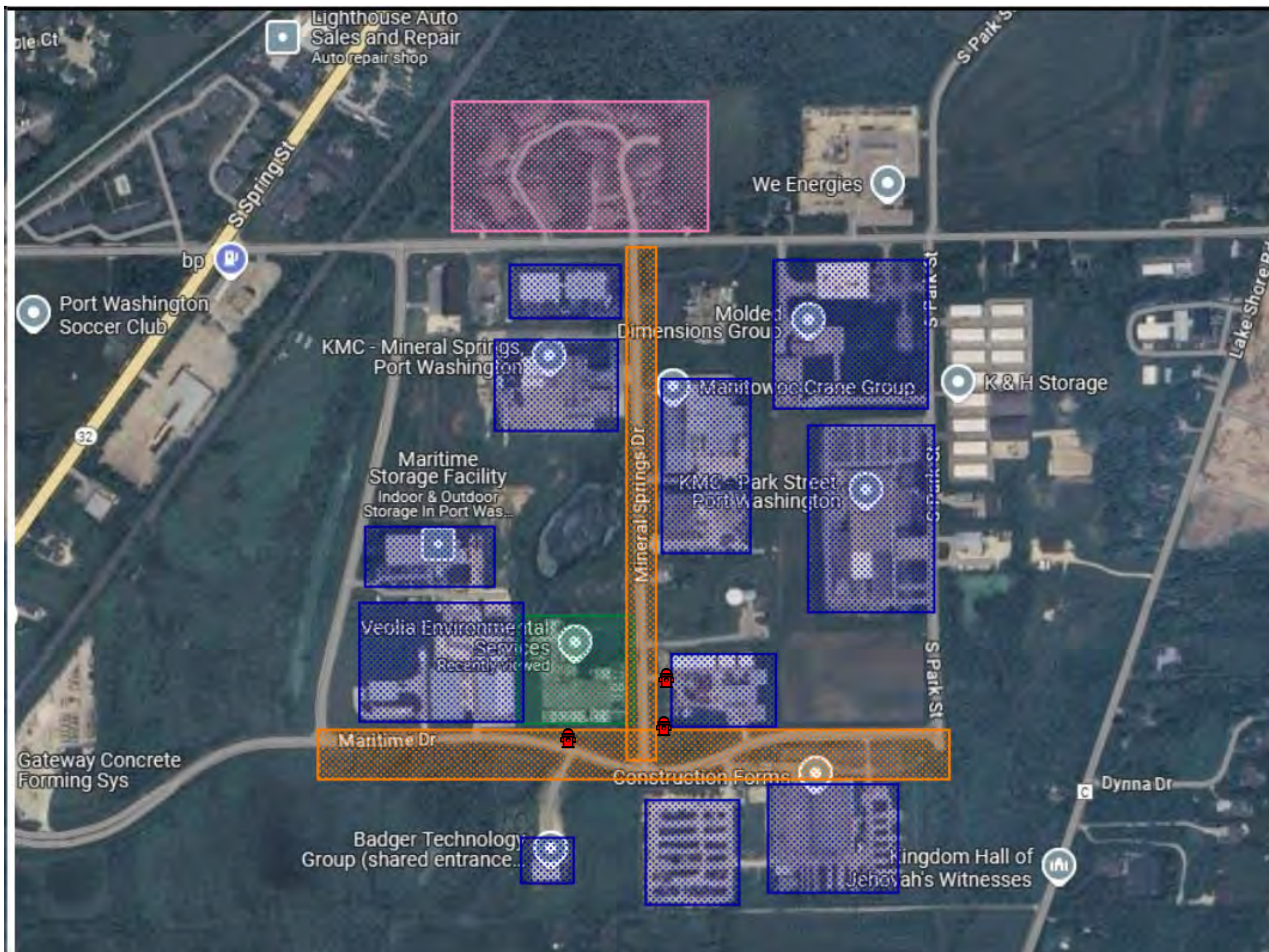
Date: MARCH 2025

Revision Date:

Drawn By: DAT

Checked By: MMB2

Project: 24V007



NOTES:

1. Base map from Google Earth
2. EPA ID#: WID988566543
3. Latitude 43.37165 Longitude -87.88824

This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.

LEGEND

- Veolia facility
- Businesses
- Access roads: Mineral Springs Drive, Maritime Drive
- Residential
- Fire Hydrant



VEOLIA ES TECHNICAL SOLUTIONS, LLC

DRAWING D-4

AREA STREET MAP
1275 Mineral Springs Drive
Port Washington, WI 53074

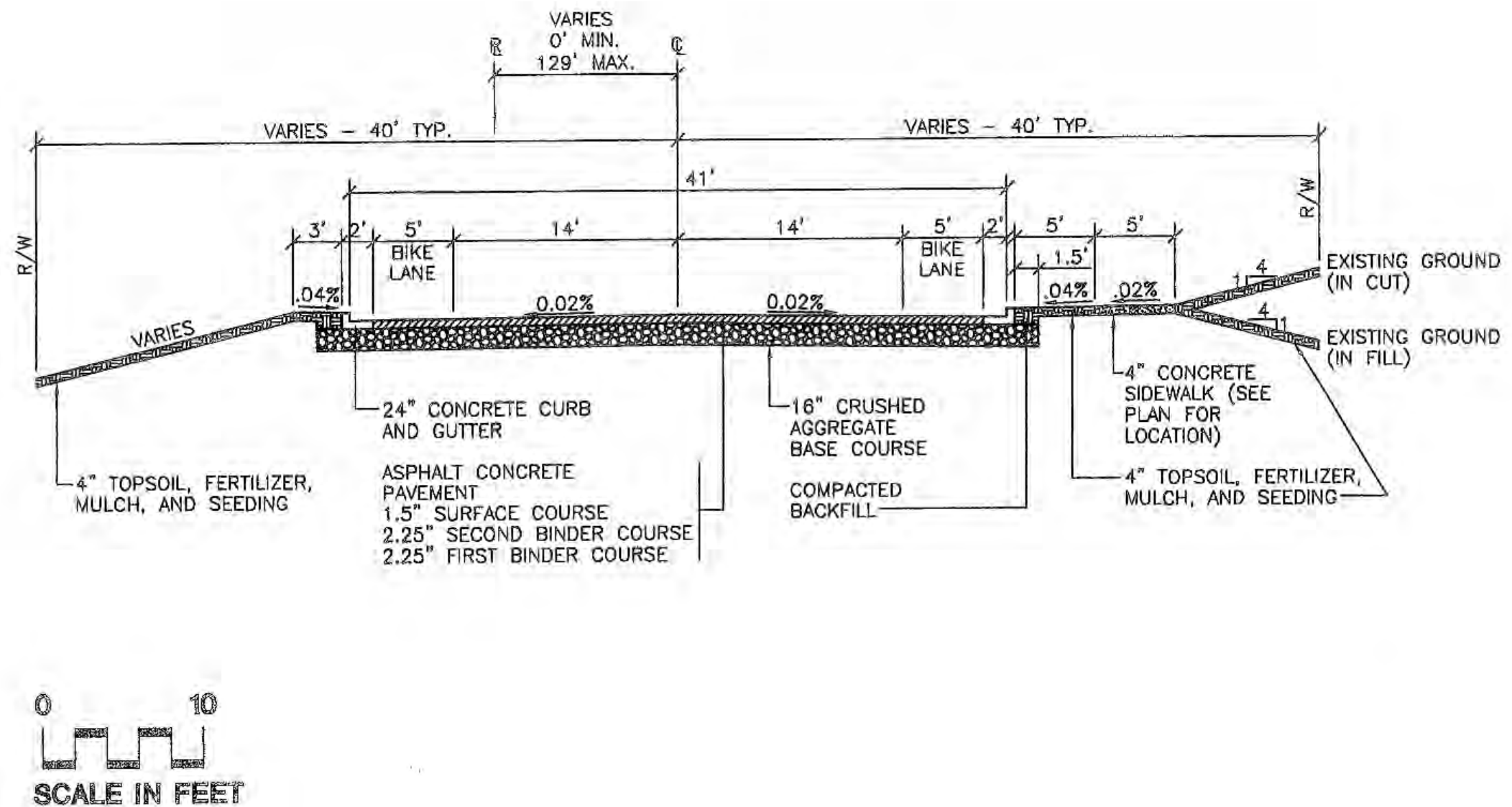
Date: MARCH 2025

Revision Date:

Drawn By: DAT

Checked By: MMB2

Project: 24V007



NOTES:

1. Base map supplied by client.
2. EPA ID#: WID988566543
3. Latitude 43.37165 Longitude -87.88824



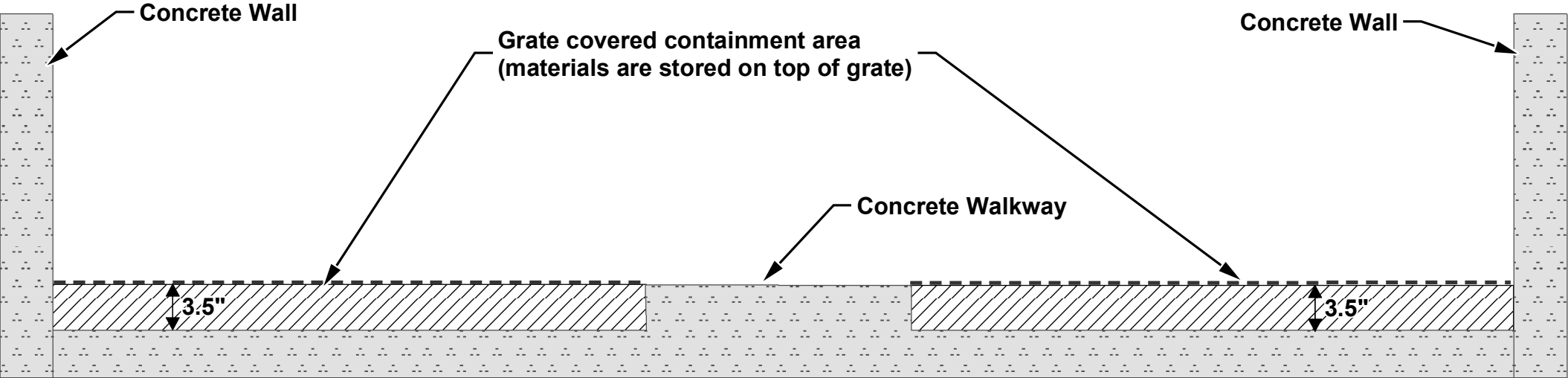
VEOLIA ES TECHNICAL SOLUTIONS, LLC

DRAWING D-5

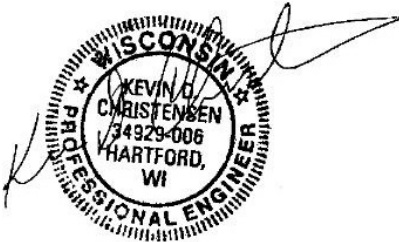
Roadway Typical Cross Section
1275 Mineral Springs Drive
Port Washington, WI 53074

Date: FEBRUARY 2025 Revision Date:

Drawn By: DAT Checked By: MMB2 Project: 24V007



License Number	Unit Description	Sub Unit Description	Storage Capacity (gallons)	Storage Area (sq. ft.)	Containment Depth (in)	Cubic Feet	7.481 gal/cu.ft.	Calculated Secondary Containment (gallons)	Percentage of Storage Volume (%)
6008	Storage Room 1	Pod 1A	3,575	360	3.5	105	7.481	786	22%
		Pod 1B	2,145	232	3.5	68	7.481	506	24%
		Sub room	501	68	3.5	20	7.481	148	30%
	Storage Room 2	Pod 2A	2,530	394	3.5	115	7.481	860	34%
		Pod 2B	2,860	400	3.5	117	7.481	873	31%
		Pod 2C	2,475	336	3.5	98	7.481	733	30%
	Storage Room 3	Pod 3A	935	98	3.5	29	7.481	214	23%
		Pod 3B	840	95	3.5	28	7.481	207	25%
		Pod 3C	746	98	3.5	29	7.481	214	29%
		Pod 3D	1,100	117	3.5	34	7.481	255	23%
		Pod 3E	980	114	3.5	33	7.481	249	25%
		Pod 3F	1,100	118	3.5	34	7.481	257	23%



NOTES:
1. EPA ID#: WID988566543
2. Latitude 43.37165 Longitude -87.88824

I hereby certify that I am a licensed professional engineer in the State of Wisconsin in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in NR 670.015(1)(c), Wis. Adm. Code

Kevin D Christensen

Digitally signed by Kevin D Christensen
DN: CN=Kevin D Christensen,
dnQualifier=A01410D00000190C631DE5000031418,
O=Unaffiliated, C=US
Date: 2025.04.02 10:35:55-0500

VEOLIA ES TECHNICAL SOLUTIONS, LLC		
DRAWING D-6		
Storage Pod Floor Cross Section 1275 Mineral Springs Drive Port Washington, WI 53074		
Date: MARCH 2025		Revision Date:
Drawn By: DAT	Checked By: KDC	Project: 24V007

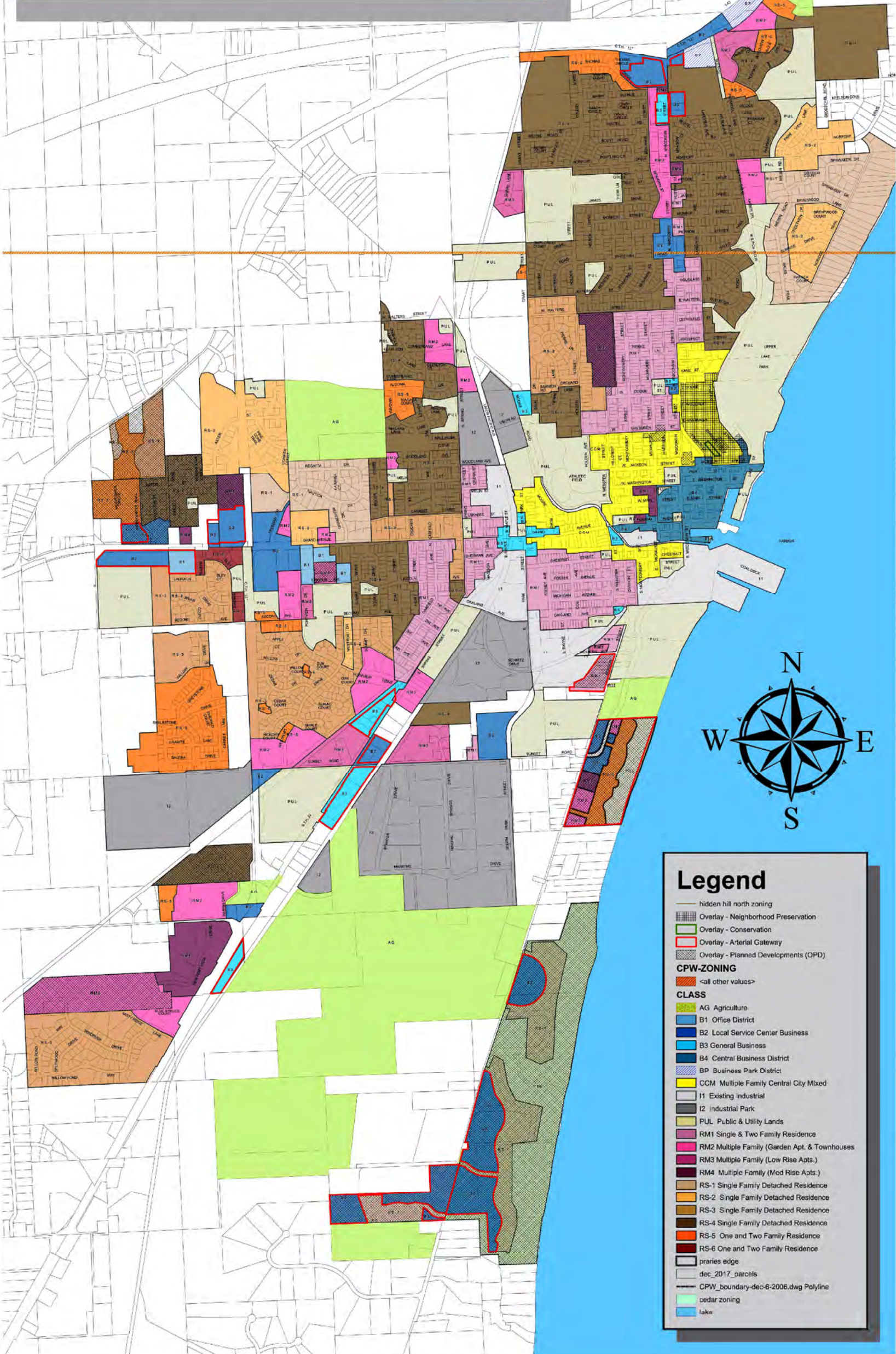
Official Zoning

City of Port Washington, WI

Date: 12/11/2018

Document Name: Official Zoning

User Name: rkroeger



Legend

- hidden hill north zoning
- Overlay - Neighborhood Preservation
- Overlay - Conservation
- Overlay - Arterial Gateway
- Overlay - Planned Developments (OPD)
- CPW-ZONING**
- <all other values>
- CLASS**
- AG Agriculture
- B1 Office District
- B2 Local Service Center Business
- B3 General Business
- B4 Central Business District
- BP Business Park District
- CCM Multiple Family Central City Mixed
- I1 Existing Industrial
- I2 Industrial Park
- PUL Public & Utility Lands
- RM1 Single & Two Family Residence
- RM2 Multiple Family (Garden Apt. & Townhouses)
- RM3 Multiple Family (Low Rise Apts.)
- RM4 Multiple Family (Med Rise Apts.)
- RS-1 Single Family Detached Residence
- RS-2 Single Family Detached Residence
- RS-3 Single Family Detached Residence
- RS-4 Single Family Detached Residence
- RS-5 One and Two Family Residence
- RS-6 One and Two Family Residence
- praries edge
- dec_2017_parcel
- CPW_boundary-dec-6-2006.dwg Polyline
- cedar zoning
- lake

- NOTES:**
1. Base map supplied by client.
 2. EPA ID#: WID988566543
 3. Latitude 43.37165 Longitude -87.88824



VEOLIA ES TECHNICAL SOLUTIONS, LLC

DRAWING D-7

ZONING DISTRICT MAP
1275 Mineral Springs Drive
Port Washington, WI 53074

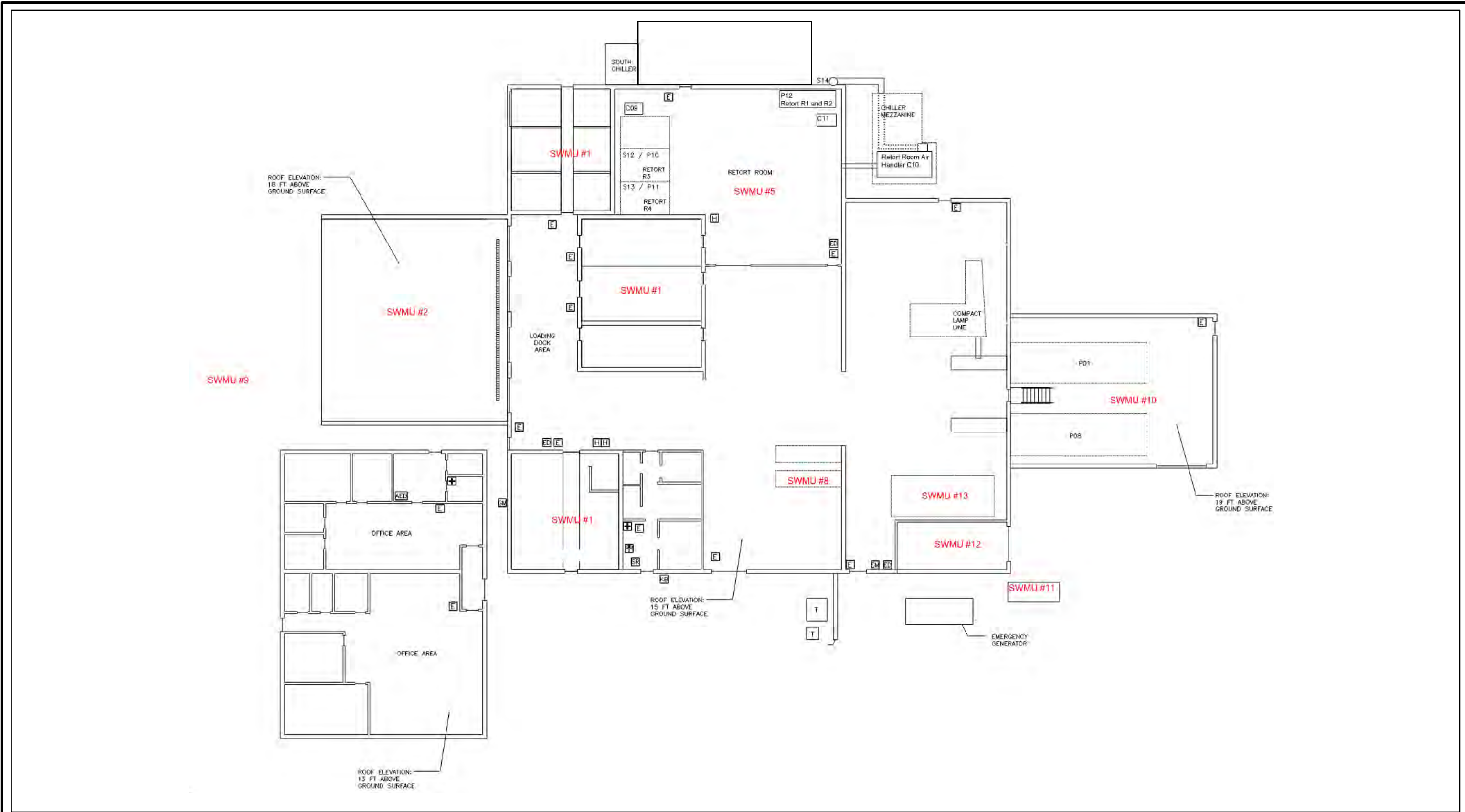
Date: MARCH 2025

Revision Date:

Drawn By: DAT

Checked By: MMB2

Project: 24V007



NOTES:

1. Base map supplied by client.
2. EPA ID#: WID988566543
3. Latitude 43.37165 Longitude -87.88824

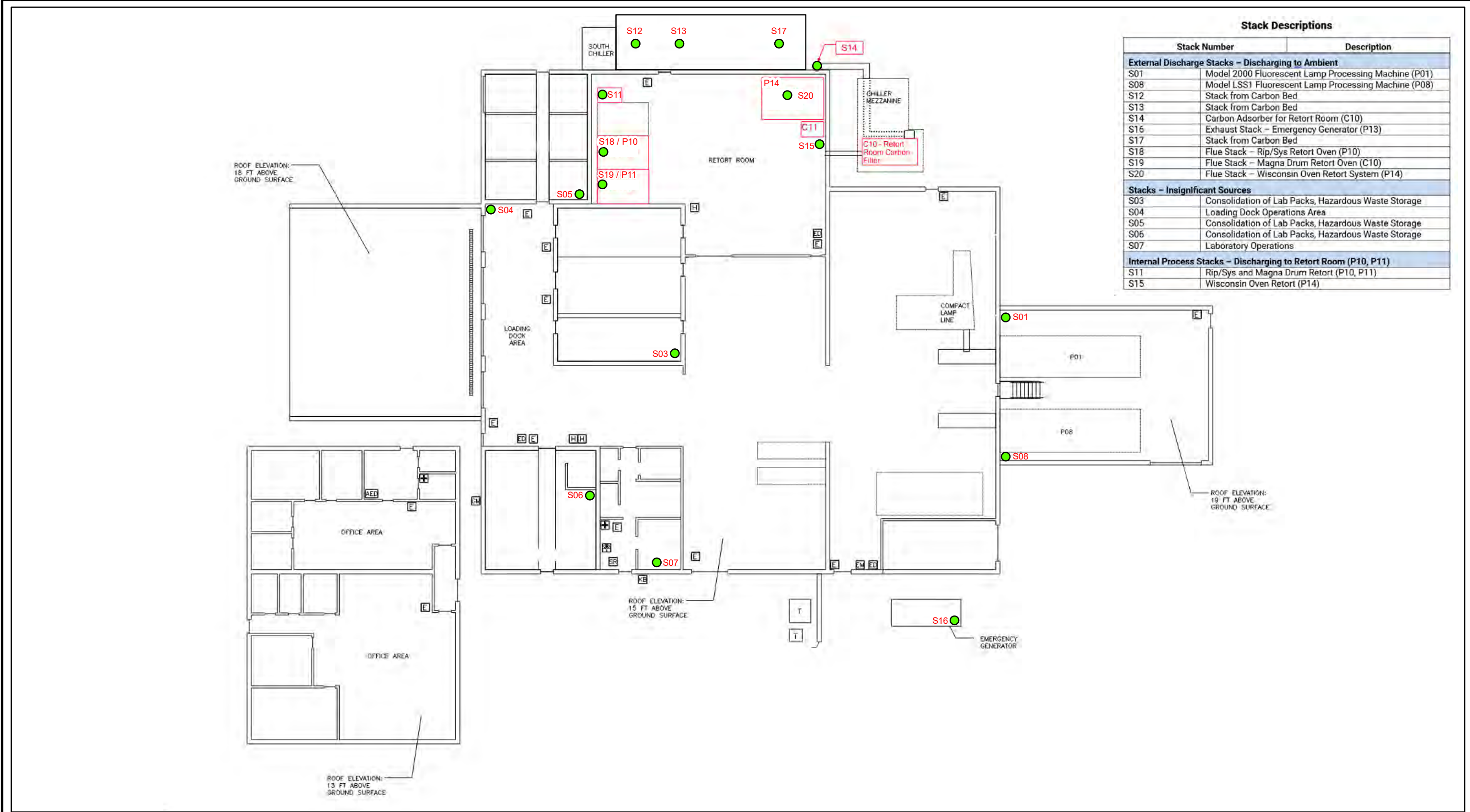
LEGEND

SWMU # - Active Solid Waste Managment Units

This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.



VEOLIA ES TECHNICAL SOLUTIONS, LLC		
DRAWING D-8 LOCATION OF ACTIVE SOLID WASTE MANAGEMENT UNITS 1275 Mineral Springs Drive Port Washington, WI 53074		
Date: MARCH 2025	Revision Date:	
Drawn By: DAT	Checked By: MMB2	Project: 24V007



NOTES:

1. Base map supplied by client.
2. EPA ID#: WID988566543
3. Latitude 43.37165 Longitude -87.88824

LEGEND

Miscellaneous Unit/ Retort Operations

SXX - Stack Locations

PXX - Process Locations

CXX - Control Device Location

This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.

VEOLIA ES TECHNICAL SOLUTIONS, LLC

DRAWING D-9

STACK LAYOUT

1275 Mineral Springs Drive

Port Washington, WI 53074

Date: MARCH 2025

Drawn By: DAT

Revision Date:

Checked By: MMB2

Project: 24V007

Path: Q:\Veolia\24V007.00\GIS\mxd\FPOR Site Figures\Drawing D-9 - Stack Layout.mxd Date: 4/2/2025

Appendix A

Correspondence

A-1 Call-in Letter

A-1
Call-in Letter



March 12, 2024

Transmitted via email

File Ref: FID 246076050
Ozaukee County
LIC

Justin Provo, EHS Manager
Veolia ES Technical Solutions, LLC
1275 Mineral Springs Drive
Port Washington, WI 53074

SUBJECT: Application and Feasibility and Plan of Operation Report (FPOR) Call-in Letter
Veolia ES Technical Solutions, LLC
EPA ID #: WID988566543
License # 6008 for Storage of Hazardous Waste in Containers
License # 4585 for Treatment of Hazardous Waste (Retorting)

Dear Mr. Provo:

On September 4, 2015, the department issued a final determination to approve the FPOR for Veolia ES Technical Solutions, LLC, Port Washington, WI (Veolia PW), followed by a letter dated October 8, 2015 to confirm the re-licensing for storing and treating hazardous wastes, subject to annual licensing. The expiration date of the 10-year effective period of the operating license is October 8, 2025.

If the licensee chooses to continue to operate its hazardous waste facility, the licensee must re-submit a license application at least 180 days before the expiration date, as specified in s. NR 670.010(8), Wis. Adm. Code. Accordingly, Veolia PW must submit an updated application to the department by April 8, 2023.

Due to the volume of licensing activity the department is anticipating during this period, and due to the breadth of review required for license renewal activities, it is strongly encouraged that Veolia PW submit the application in advance of this deadline to allow more time for establishing that the application is complete prior to the expiration date, for the purposes s. NR 670.051(1), Wis. Adm. Code. Please feel free to contact the department to discuss options for early submittal.

If the licensee submits a timely and complete license application, s. NR 670.051, Wis. Adm. Code, allows the conditions of an expired operating license to continue in force until the department takes final action on the application, and the expired operating license remains fully effective and enforceable.

Please be aware of certain key requirements that are triggered if an operating license expires. Veolia PW would not be able to continue operating as previously licensed as a hazardous waste storage and treatment facility. Hazardous waste storage and treatment activities that require a license would need cease by the day the license expires. Closure would need to be performed in accordance with the approved closure plan and the applicable requirements of ch. NR 664, subch. G, Wis. Adm. Code. The department would need to be notified of Veolia PW's intent to close their facility at least 180 days prior to the expiration date of the license, in accordance with s. NR 664.0112(4), Wis. Adm. Code.

At a minimum, the license application must include a complete feasibility and plan of operation report (FPOR) and the EPA Part A form, as specified in s. NR 670.002(15), Wis. Adm. Code. The minimum content requirements for the FPOR are established in ss. NR 670.014 to NR 670.029, Wis. Adm. Code. The minimum content requirements for the Part A application are established in ss. NR 670.013, Wis. Adm. Code. In addition, as described later in this call-in letter, the FPOR must also address other important aspects of the facility and its operations.

The department has significantly updated its expectations for a complete and technically adequate FPOR since the development and submittal of Veolia PW's last FPOR. Many of these required elements are discussed in this letter. To address these requirements, it is likely that Veolia PW's new FPOR will be significantly different than what is currently approved. Put another way, just because the prior FPOR contained or did not contain certain information, it may not be acceptable in this license renewal effort. This is another reason why there is value in submitting renewal documents to the department, in part or in full, prior to the deadline, so program staff and facility staff can work through the updated elements in a timely and logical manner.

In preparing this call-in letter, the department performed a very cursory review of Veolia PW's currently approved FPOR dated May 15, 2025. If Veolia PW would like the department to review any sections of that FPOR in more detail, in order to assist in developing the contents and organization of the updated FPOR, Veolia PW can reach out to Mr. Coenen.

Some of the required and recommended contents of the FPOR and Part A are discussed in more detail in the remainder of this letter. This listing and contents are not intended to be exhaustive. They are intended to assist Veolia PW in developing a successful application.

1. FPOR Format - General

Per s. NR 670.001(2), Wis. Adm. Code, there is no established format for the FPOR other than that it shall be submitted in narrative form. However, we request that you follow the final guidelines.

- We encourage you to format the FPOR in a way that best accommodates its operational and compliance management needs.
- We encourage you to use Microsoft Word in developing the text portions of the FPOR (such as the body of the FPOR, and those appendices based in text). This can be helpful in reviewing and updating these sections.
- Some applicants may find it helpful to include rule citations when FPOR elements are related to detailed requirements of chs. NR 660 to 670, Wis. Adm. Code. However, when identifying applicable regulatory requirements within the FPOR, effort should be made to avoid negatively affecting the readability and functionality of the document.
- Each section and subsection of the FPOR should bear a unique number and descriptive title, which are captured in the table of contents. Please do not rely solely on regulatory section citations or licensing checklist headings in these titles.
- We encourage you to cover a particular topic in one single section of the FPOR, and to refer to that section (rather than repeat it) as appropriate in other sections where it may also be relevant. This will help to avoid redundancy and reduce the possibility of inconsistencies. For example, if the specific laboratory activities proposed to check for incompatible wastes are included in the WAP, then other than the FPOR section(s) that deal with incompatible waste controls should refer to the testing described in appropriate WAP section (rather than repeat it).

- Use a page numbering system where every page is marked with the page number in the footer, The chapter may be used in the page number scheme. The date should also be included in the footer so revised pages (in later versions) are clearly identified. For example, a page numbering system of 5-13 along with *rev. 12-23-11*, indicates chapter/section 5, page 13, including revisions made on December 23, 2011. Please refrain from the use of using roman numerals for numbering pages.
- Ensure that the FPOR is well-written in a cogent way with proper paragraph structure and spacing, and a minimum of typographical and grammatical errors.
- Use unambiguous language and establish a clear set of facts and procedures so that the facility is less likely to have compliance issues related to their FPOR. For example, some operating plans improperly use “should”, “could”, and “may” when addressing a particular action. These sorts of words represent ambiguous language because the decision to take an action can be based on assumptions, convenience, or whim, and not on actual circumstances and objective facts.
- Avoid the use of jargon that may have different meanings to different people. When appropriate, define these types of words or terms.
- Ensure that all information presented in the FPOR (text, figures, tables, and drawings) is legible and free from unintended visual artifacts and superfluous information.
- Ensure that the FPOR has a title sheet, naming the report as a "Feasibility and Plan of Operation Report", and including the facility name, EPA ID number, DNR FID number, and the date of the FPOR.
- Ensure that the Table of Contents incorporates all sections/subsections, tables, figures, and appendices. of the FPOR.
- Ensure that each appendix or attachment has a cover sheet. If multiple documents are included, the cover sheet should list them.
- All references to hazardous waste requirements should be Wisconsin regulations (e.g. chs. NR 600-679, Wis. Adm. Code), not U.S. EPA regulations (e.g. 40 CFR Parts 200-280).
- The FPOR should have a cover sheet that includes the name of the report, the facility name and location, EPA ID number, DNR FID number, and report date.
- The FPOR should be submitted with a transmittal letter that clearly refers to the FPOR being submitted.

2. Paper and Digital Submittal Details

NR 670.010(1) requires two original paper copies of the license application. However, the department instead recommends, and will instead accept, the digital submittal of a single PDF as the official document. In the event the PDF (and any accompanying files) are too large for emailing, Veolia PW may utilize a file sharing site that can be safely accessed by the department.

One “paper copy” with identical contents should also be submitted to assist in the department’s review (please check with Mr. Coenen for the appropriate mailing address). Any drawings or figures in the hard copy should be sized so the contents are readable and legible to the reviewer.

Regarding the format of the PDF, please follow these guidelines:

- a. The application should be submitted to the department in a single, combined PDF (including the transmittal or cover letter).
- b. The single PDF should be built as a searchable/readable PDF, and/or ran through an optical character recognition (OCR) software such as Enhance Scans in Adobe Pro, to make the document a searchable/readable PDF.
- c. All parts/sections/subsections (e.g., current Part 1.a.1) and attachments (e.g., appendices, sub-appendices, figures, tables) should be designated bookmarks in the PDF and the name of the bookmark should be the name of the section or attachment.
- d. Major sections within the Table of Contents should be hyperlinked, this would include major sections

- within the FPOR text, appendices, and figures or tables listed in the TOC.
- e. All cross-references to attachments should be internally hyperlinked to the appropriate attachment (e.g., all references to Appendix A in the body of the FPOR should include a hyperlink to Appendix A, or a reference to “Figure 1” of Table 1” should be hyperlinked in a different part of the FPOR).
 - f. The single PDF may be submitted using a file-sharing website or tool that is safely accessible to the department’s staff. We recommend Veolia PW contact Mr. Coenen in advance to discuss options.
 - g. Please ensure that the single PDF is accompanied by separate digital files of the license checklist (in Excel) and the tracked-changes WAP Example (in Word), as discussed elsewhere in this letter.

The single PDF should also include the application transmittal letter, refers to the date of the FPOR and any other information needed to properly present the application and FPOR. The transmittal letter should also refer to, and the transmittal should include separate digitized versions, of:

- The WDNR WAP Example with tracked changes and comments, in Word format. Please note that our recommended use of this WAP Example is discussed later in this letter.
- The WDNR License Checklist, in Excel format.

Upon receipt, the department will invoice Veolia PW for the appropriate plan review fee established in Appendix II of ch. NR 670, Wis. Adm. Code.

After submittal of the PDF, the department will inform Veolia PW if any additional paper copies (e.g. larger-sized drawings) or individual digital files (e.g. Word versions) are needed to assist in its review.

3. FPOR – General Contents

a. Contents - General

It is important that the FPOR be determined to be complete and technically adequate. Failure to provide a complete application may result in Veolia PW forfeiting the continuation of the license under s. NR 670.051(1), Wis. Adm. Code, or an unfavorable determination.

At a minimum, the FPOR must contain all of the applicable information required in s. NR 670.014, Wis. Adm. Code, and the applicable information required ss. NR 670.015 through NR 670.027, Wis. Adm. Code. If a certain content requirement in ss. NR 670.13 through NR 670.027, Wis. Adm. Code does not apply, this should be stated, along with the reason why.

In addition, the FPOR must contain:

- information to demonstrate compliance, and/or describe how compliance will be achieved, with applicable sections of ch. 664, Wis. Adm. Code (as discussed later in this letter, in the discussion regarding Technical Adequacy); and
- information to describe generally describe the facility, and to describe other waste-related activities within the facility boundaries,
- the other information described in the remainder of this letter;

b. Transmittal Letter

The FPOR should be accompanied by a transmittal letter (addressed to Mr. Coenen) that establishes the submittal date, briefly describes the submittal, and identifies the individual (and contact information) whom the department should contact about questions.

c. Checklist

The department has developed a licensing checklist to help prepare a thorough and complete license application. The current version of the checklist is dated January 27, 2023, and it will be provided to Veolia PW along with this letter in a separate electronic (Excel) file. Please note that the checklist is intended to identify only the minimum information that must be provided in the FPOR. Please also note that the checklist's brief descriptive summaries of each piece of required content is informational only, and may not completely or accurately describe the regulatory requirement.

To facilitate the review of your license application, it is important that you indicate in the licensing checklist the specific section/subsection and/or page(s) where the required information is to be found in the FPOR. You should submit the fully completed checklist with the license application. Please add the FPOR date to the checklist form. It is recommended that the completeness checklist be included as an appendix within the FPOR. Please also provide an excel version of the checklist when transmitting the application.

To assist in the review process, please separately provide an unlocked, page-formatted and dated electronic version (in excel) of the completed checklist.

d. Record of Changes

Once submitted and ultimately approved, it is possible that the proposed FPOR will require modifications, for example, to address Class 1, 2 or 3 license modifications. Therefore, we strongly suggest that the FPOR include a "Record of Changes", and that each page of the FPOR (including the cover sheet) contain the publication date. As changes are proposed, the department may request supplementary "red-line" versions to better identify changes.

Please note that the proposed FPOR's Record of Changes should be blank. Changes would be logged after the FPOR is approved to track any subsequent approved changes to the FPOR.

e. Signatures and Certifications

Also note that the license application must be certified in accordance with s. NR 670.011, Wis. Adm. Code. Per s. NR 670.010(2), Wis. Adm. Code, the signature requirements apply to the operator and to the owner. If these are separate entities, separate certifications and signatures are needed. Please ensure that the FPOR describes the relationship between such multiple entities.

Per s. 289.24(1), Wis. Stat., the department may require the FPOR to be prepared by a registered professional engineer. Sec. NR 670.014(1), Wis. Adm. Code, requires that technical data, such as design drawings and specifications, and engineering studies be certified by a qualified professional engineer. The department recommends that Veolia PW consider engaging a qualified engineer and/or environmental consultant with experience and expertise in the area of hazardous waste storage, and licensing in preparing its license application. At a minimum, the following must be certified by a qualified professional engineer:

- Cost estimates for financial assurance (closure, long-term care, corrective action)
- Secondary containment system drawings, details, and calculations
- Tank system certifications (per NR 664, subch. J)
- Tank system design or as-built drawings

The PE certification must include the stamp/seal, date, and the certification statement. It is recommended that the certification statement be patterned after the requirements of NR 500.05(1).

4. Part A Form and NR 670.013

Per s. NR 670.001(2), Wis. Adm. Code, the completed U.S. EPA Part A application form should be included as an appendix within the FPOR. The Part A form (8700-23) must contain current and accurate information, and should be provided along with EPA form 8700-12 (Site Identification Form), along with any applicable addenda (e.g. Notification of Hazardous Secondary Materials (HSM) Activity). Please note that any changes included in these forms are not approved until a license modification or renewal addressing these changes is issued.

Please refer to the following links to U.S. EPA resources to assist in completing the RCRA Subtitle C and Part A application forms:

- https://rcrapublic.epa.gov/rcrainfoweb/documents/rcra_subtitleC_forms_and_instructions.pdf?sessionid=93B440BE6B8C7D4BE318D5F362893493
- [Excerpt of the RCRA Forms and Instructions for the Part A Permit Application Only](#)

Some of the Part A-related information requirements are discussed in these EPA instructions, with the form itself (Form 8700-23), and in s. NR 670.013, Wis. Adm. Code. There may be inconsistencies or lack of clarity within these instructions, or the information that is needed may not “fit the boxes” of the EPA form well. Where information required by the Part A form is presented in the FPOR (rather than within the form), the form should include a clear reference to the applicable FPOR section.

In any case, the FPOR must include all information NR 670.013, Wis. Adm. Code, whether within the Part A form or elsewhere (and properly referenced) in the FPOR. The following is a list of some of the Part A-related contents from this code section with some explanations on how Veolia PW may want to provide the information.

NR 670.013(1) The activities conducted by the applicant which require it to obtain a license.

- These activities must be clearly described in detail in the FPOR. Please see the section later in this letter titled “Process Descriptions” for more information

NR 670.013(2) (regarding latitude and longitude of the facility) and NR 670.013(3) (regarding SIC Codes)

- The latitude/longitude and the SIC codes should be included in the FPOR since spaces are not provided on EPA’s Part A form. NAIC codes can be used instead of SIC codes. All of this information should be presented in the section described later under “Facility Description”.

NR 670.013(4) and (5) (owner and operator information) and NR 670.013 (6) (Indian lands)

- This info should be included in the FPOR since spaces are not provided on EPA’s Part A form in the section described later under “Facility Description”.

NR 670.013(7) An indication of whether the facility is new or existing and whether it is a first or revised application.

- If the application is only intended to support a re-issuance of the license beyond the current 10-year license term and does not propose any new or modified activities requiring license changes, the FPOR should clearly state this. This information should be presented in the section described later under “Facility Description”.

NR 670.013(8), scale drawing and photos

- The scale drawing(s) can be presented with the other drawings and should clearly depict all significant aspects of each licensed unit.
- Photos should be included as a separate appendix to the FPOR. The photos should clearly present all of the licensed units (from different angles as needed). Photo information should locate the photographer location, compass direction, and date.

NR 670.013(9) A description of the processes to be used for treating, storing and disposing of hazardous waste, and the design capacity of these items.

- Please see the sections later in this letter titled “Facility Description”.

NR 670.013(10) A specification of the hazardous wastes listed or designated under ch. NR 661 to be treated, stored or disposed of at the facility, an estimate of the quantity of wastes to be treated, stored or disposed annually, and a general description of the processes to be used for the wastes.

- This listing of, estimated quantities of, and process codes for hazardous wastes to be treated, stored, or disposed can be populated in section 7 of the Part A form.
- Please see the section later in this letter titled “Hazardous Waste Process Descriptions” for more information regarding detailed process descriptions.

NR 670.013(11) A listing of all permits, licenses or construction approvals received or applied for under any applicable federal or state regulations.

- Please see the section later in this letter titled “Other Permits and Authorizations”

NR 670.013(12), topographic map

- This map can be presented with the other drawings.

NR 670.013(13) (a brief description of the nature of the business) and NR 670.013(14) (hazardous debris, if applicable)

- This info should be included in the FPOR since spaces are not provided on EPA’s Part A form. This information should be presented in the section described later under “Facility Description”.

EPA Part A Form Sections 1 and 2 (Facility Contact Info) and (3) Facility Existence Date

- Please complete in the form

EPA Part A Form Section 4 (Other Environmental Permits)

- Please see the section later in this letter titled “Other Permits and Authorizations”

EPA Part A Form Section 6 (Process Codes and Design Capacities)

- Please see the section later in this letter titled “Process Descriptions”.

EPA Part A Form Section 7, Description of Hazardous Wastes

- Complete per in EPA’s instructions

EPA Part A Form Sections 8, 9 and 10 (maps, drawings, photos)

- Regarding maps and drawing, see entry for NR 670.013(12) above
- Regarding photos, see entry for NR 670.013(8) above

EPA Part A Form Section 11 (comments)

- This should be used to include the date of the Part A, and to note that it is part of the FPOR.
- Use as needed to clarify

5. Facility Description

a. Owner, Operator, and Facility Contact Person(s)

The FPOR must identify:

- the name and address of the facility owner(s), and the facility operator,
- the contact person’s name, title, and contact information (address, phone, email) for each.

b. General Facility Description

Sec. NR 670.014(2)(a), Wis. Adm. Code, requires a description of the hazardous waste facility. This should be written to:

- Provide the public and interested parties with a general summary of the waste-related and non-waste related activities at the facility.
- Describe key aspects of the license application to assist the department in developing public notices and summary information for the final determination.
- This section can incorporate or refer to the Facility and Operations Summary discussed below.

c. “Facility and Operations Summary”

We request that Veolia PW include in the FPOR, as a stand-alone separate appendix, a general facility description similar in content to the summary provided in the following sorts of subsections that were used in the department’s September 4, 2015 approval (final determination), within the section entitled “GENERAL FACILITY INFORMATION” (beginning on Page 1 of 32, through Page 17 of 32). Please update or correct previous information as appropriate, and feel free to add to or modify the section topics. Please note that this is requested, in part, to assist the department in writing this same section of the determination it will make on your proposed FPOR, and as such can serve to be helpful as a general overview of the facility for other interested parties. The following is the table of contents from the 2014 approval, with other suggested sections added in *italics*:

GENERAL FACILITY INFORMATION.....	
Facility Description and Operation.....	
General Location.....	
Zoning	
Current Site Buildings.....	
Facility Recent Compliance History	
Waste Analysis Plan.....	
Waste Handling	
Container Storage – License # 6008	
Tanker and Roll-Off Bulking	
Treatment – License # 4585	
RipSys (R3) and Magna Drum (R4) Retort Natural Gas Fired Ovens (P10 and P11).....	
Household Hazardous Waste.....	
Universal Waste.....	
Fluorescent Light Recycling.....	
Used Oil Management.....	
Nonhazardous Solid Waste Storage and Processing – License 3870.....	
Stormwater - S067857-3	
Wisconsin Pollutant Discharge Elimination System - S067857-3.....	
Laboratory – 246076050	
Air Pollution Control Permits.....	
NR 664 Subchapter AA Standards.....	
NR 664 Subchapter BB Standards.....	
NR 664 Subchapter CC Standards.....	
Traffic Information	
Service Area	
On-Site Hazardous Waste Generation.....	
FPOR Licensing History 1989.....	
FPOR Relicensing History 1999.....	
Past Department Hazardous Wastes Decisions.....	
Past Environmental Analysis.....	
Closure	
Corrective Action.....	
Need Analysis.....	
Owner Financial Responsibility.....	

d. Licensed Units

- Summarize in tabular form the key information regarding each of the storage and treatment units

proposed for licensing, including the name, type, location, and the proposed maximum capacity of each unit. The maximum capacity should be expressed for each separate licensed unit, as follows:

- For container storage, in gallons of container capacity, and in 55-gallon equivalents
- For tank storage, in gallons
- For treatment, in unit of volume (or weight) per unit of time (e.g. gallons per day).
- If there any changes from currently approved capacities proposed in the new FPOR, please show both current and proposed (in separate columns) in the table. If any “re-allocation” of current licensed capacities from one unit to another is proposed, please ensure it is clearly described.
- Summarize the basic function and operational activities of each unit proposed for hazardous waste licensing, and other activities involving the handling of hazardous wastes.
- The locations of and detailed descriptions of the hazardous waste storage and treatment processes and facilities that require licensing must be provided in complete detail, as discussed in other parts of this letter.

e. Hazardous Waste Processing Activities

The FPOR must identify and describe the locations and descriptions of hazardous waste processes that do require licensing. Hazardous waste processing activities include the movement of hazardous waste from one unit (e.g. container or tank) to another unit, or the mixture of wastes with other wastes or materials. Examples include:

- Elementary neutralization units
- Wastewater treatment units
- Hazardous waste recycling
- Laboratory storage/treatment
- Consolidation, bulking, lab packing, de-packing and repacking
- Container unloading, loading, and staging
- Bulk waste unloading, loading, and staging (including rail cars and tanker trucks)
- License-exempt treatment or reclamation
- Any other movement of hazardous waste into another container or tank
- Any other activity that combines hazardous waste with another material or waste.
- Totally enclosed treatment units.
- Lamp Recycling
- Hazardous waste transportation activities
- Operations involving materials that may qualify for exclusions or exemptions in chs. NR 600-679, Wis. Adm. Code. Examples include:
 - Universal waste activities
 - Household hazardous waste activities
 - 10-day transfer facility activities
 - The handling of conditionally excluded CRTs
 - The handling of conditionally exempt wastes such as RCRA-empty drums
 - The handling of wastes conditionally exempted due to recycling or reclamation
 - The handling of other contaminated materials from third parties or customers that if discarded would be hazardous wastes, such as continued-use materials
 - The handling of treatability samples and studies
- Hazardous waste generator activities (e.g. satellite accumulation, , lab wastes, PPE)
 - Satellite accumulation
 - 90-day storage
 - Generated lab wastes, PPE wastes
 - Processing and treatment residues

- Treatability samples and studies
- Vehicle or equipment maintenance activities that may involve hazardous waste generation
- Manufacturing, material processing activities or other activities not related to incoming waste management that may involve hazardous waste generation.

If any of these examples will not occur at the facility, we recommend that the FPOR simply identify them as activities that do not occur.

f. Other Waste-Related Activities

Wastes other than hazardous wastes can create risks to human health and the environment, and can affect hazardous waste areas and processes at a hazardous waste TSDF. Wastes that may be assumed to be, or mistakenly handled as, non-hazardous wastes, can be subject to hazardous waste TSDF requirements or affect how TSDF requirements are met. Some materials are exempt from regulation if they meet certain conditions, but can also become subject to hazardous waste TSDF requirements if the conditions are not met. Examples include:

- Non-hazardous solid waste operations (e.g. storage, transfer, processing; see NR 502)
- Used oil handling
- Hazardous waste activities (in addition to the processing activities discussed above) that are not required to be licensed.
- Activities associated with handling wastes that continue to be subject to LDR requirements (such as de-characterized wastes).
- Solid waste storage, transfer, or processing activities
- Management of empty containers

If any of these examples will not occur at the facility, we recommend that the FPOR simply identify them as activities that will not occur.

g. Hazardous Secondary Materials

The FPOR must identify and describe hazardous secondary materials (HSM) activities. A description of the HSM activities should include all of the following:

- How these HSM are separately identified from being hazardous wastes.
- How HSM are segregated from hazardous wastes during their handling.
- How the facility meets all of the applicable HSM requirements (for example, as a tolling contractor, and/or under the transfer-based exclusion), including such items as how the materials are properly contained, how the legitimate recycling factors are met, financial assurance, recordkeeping, and notifications.

If HSM will not be managed at the facility, we recommend that the FPOR simply identify it as an activity that will not occur.

h. Hazardous Waste Container Handling

The FPOR should provide the locations of, and operational protocols and precautions for, container handling, including:

- Unloading inbound containers from transport vehicles
- Staging of inbound containers
- Movement to licensed storage
- Staging of outbound containers

- Loading outbound containers to transport vehicles

6. Air Emissions

a. General

Please note following specific FPOR content requirements that relate to air pollution controls and emissions:

- Sec. NR 670.014(2)(h)6., Wis. Adm. Code regarding the prevention of releases to atmosphere.
- Sec. NR 670.014(2)(x)2.a., Wis. Adm. Code regarding local, state, and federal permits.
- Sec. NR 670.014(2)(x)2.b., Wis. Adm. Code regarding emissions and discharges.
- Sec. NR 670.014(2)(x)2.d., Wis. Adm. Code, regarding probable impacts including primary, indirect, and secondary impacts.
- Sections NR 670.024, NR 670.025, and NR 670.027, Wis. Adm. Code regarding air emission controls information associated with subchapters AA, BB and CC of ch. NR 664, Wis. Adm. Code, respectively.

Therefore, the FPOR should describe in detail how Veolia PW will prevent unauthorized air emissions, and how Veolia PW more generally meets or will meet the requirements of ch. 285, Stats. (Air Pollution) and chs. NR 400 through 499, Wis. Adm. Code. It is recommended that early in the course of developing its FPOR and license application preparation, Veolia PW evaluate its air permit status and ensure that all related information and permits are accurate and up to date.

b. Subchapters AA, BB, and CC of NR 664

The FPOR should identify equipment and units subject to subch. AA requirements and include all information needed to describe compliance with applicable subch. AA requirements.

The FPOR should include all information needed to describe compliance with applicable subch. BB requirements, including for example:

- The FPOR should include the subch. BB equipment inventory required for the operating record, such as the information in ss. NR 664.1064(2), (7), (8), (9)(a), (10), and (11), Wis. Adm. Code.
- For each piece of equipment, the applicable equipment type should be identified in this inventory according to the categories established in ss. NR 664.1052 through NR 664.1062, Wis. Adm. Code.
- How equipment will be uniquely identified in the field, or “tagged”.
- The recordkeeping and reporting requirements in ss. NR.664.1064 and 664.1065, Wis. Adm. Code, should be discussed.

It is recommended that the FPOR contain a table that includes, for each piece of equipment subject to subch. BB, the information needed to establish BB compliance requirements, such as:

- The information listed in NR 664.1064(2), such as equipment identification number, hazardous waste management unit identification, approximate location, type of equipment (e.g., a pump, valve, connector, agitator), the waste’s percent-by-weight total organics, hazardous waste state at the equipment (e.g., gas or vapor or liquid), method of compliance (e.g., “monthly leak detection and repair”, “annual LDAR”, “visual/audible/olfactory inspection”, or “equipped with dual mechanical seals”).
- Other information needed to establish compliance requirements, such as service type (such as light liquid), whether the equipment is subject to “no detectable emissions”, whether the equipment is maintained in vacuum service, whether the equipment is difficult to monitor (and the reason), whether the equipment is unsafe to monitor (and the reason).

The FPOR should identify equipment and units subject to subch. CC requirements and include all information needed to describe compliance with applicable subch. CC requirements, including for example the following sections of the Wis. Adm. Code:

- NR 664.1083, waste determination procedures, which we recommend be addressed in the WAP.
- NR 664.1084, tank standards, such as the applicability of and a description of the method(s) for meeting Level 1/2/3 controls
- NR 664.1086, container standards, such as the applicability of and a description of the method(s) for meeting Level 1/2/3 controls
- NR 664.1087, standards for closed-vent systems and control devices, including details of such systems.
- NR 664.1088 – 664.1090, Inspection, recordkeeping, and reporting requirements.

The FPOR should describe how containers subject to subch. CC requirements will meet those requirements,

If an alternative compliance methodology, such as following an NSPS (40 CFR Part 60) or NESHAP (40 CFR Part 61 or 63), is chosen for subchs. AA or CC, the FPOR should address how these federal rules (and specific applicable permit condition requirements) apply and what units in hazardous waste service are covered by these standards. Note that certification, and the language/contents required in the certification, is required under ss. NR 664.1030(5) and NR 664.1080(2)(g), Wis. Adm. Code, respectively.

The FPOR should address how the facility will address compliance with s. NR 661.0006(4), Wis. Adm. Code, which requires that units that recycle hazardous wastes (such as distillation and evaporation units) meet the requirements specified in subchs. AA and BB of ch. NR 664.

7. Other Permits and Authorizations

Sec. NR 670.014(2)(x)2.a., Wis. Adm. Code, requires the FPOR to address local, state, and federal permits. Also note that s. NR 670.013(11), Wis. Adm. Code, requires “A listing of all permits, licenses or construction approvals received or applied for under any applicable federal or state regulations.” Also note that EPA Part A Form Section 4 requires information regarding “Other Environmental Permits”. Please ensure that a section of the FPOR called “Other Permits and Authorizations” addresses these content requirements.

In general, this FPOR should identify and describe all other environmental and land use authorizations and approvals established or required to operate the facility, and if new construction is proposed, to construct the facility. Key authorizations and approvals should be included in an appendix or appendices, including but not limited to those involving:

- zoning/land use; if land use is established without a site-specific land use authorization (such as a conditional use permit) such as via a zoning ordinance or via grandfathered use, this should be described.
- non-hazardous solid waste storage, transfer and/or processing. Please ensure that NR 500-series licensing documents, such as plans of operation and approvals, are current.
- air emissions; current air permit(s) (construction and operating)
- wastewater discharges (e.g. authorizations for discharges to the local sewer)
- stormwater/surface water discharges
- wetlands
- environmental remediation/cleanup activities
- DTCAP tank registrations

8. Secondary Containment

The FPOR should clearly describe:

- the processes used to promptly evaluate and properly dispose of liquids and other debris (including collected precipitation) that collects in the secondary containment structures.
- How Veolia PW constructs and maintains the secondary containment systems to remain watertight, including expansion joints, slab/curb interfaces, etc.

P.E. certification is needed for the computations of secondary containment volumes required by s. NR 664.0175, Wis. Adm. Code (containment for containers), and s. NR 664.0193, Wis. Adm. Code (containment for tanks). Detailed supportive drawings must also be certified by a P.E. and should clearly depict the dimensions and details used in the computations.

Secondary containment calculations should consider:

- displacement volumes (from materials and equipment within the containment area)
- consider fire suppression fluids
- volumes of liquids stored in all containers containing free liquids (not just hazardous waste)
- The capacity of containers containing free liquids (not the volumes in containers that are not full)

The FPOR should describe secondary containment strategies used or deployed for bulk loading and unloading operations.

The FPOR should specifically address the following department concerns regarding the existing secondary containment systems associated with hazardous waste storage tanks:

- Repairs should be completed before system failure occurs, rather than after failure is observed and/or after weather/seasonality allows.
- Some of these systems may have experienced damage, due perhaps to wear and tear, age, design or construction deficiencies, structural failures, differential settlement, etc., such that renovation/reconstruction (rather than repeated repairs) may be needed.

9. Generator Wastes

For wastes created or generated through consolidation/bulking and/or treatment activities, the FPOR must clearly describe how Veolia PW will assure compliance with the waste characterization-related requirements of chs. NR 662 through NR 679, Wis. Adm. Code. For additional information, please refer to:

- U.S. EPA publication EPA 530-R-12-001, entitled “Waste Analysis at Facilities that Generate, Treat, Store and Dispose of Hazardous Waste”, dated April 2015, which can be found at:
<https://www.epa.gov/sites/production/files/2015-04/documents/tsdf-wap-guide-final.pdf>

The FPOR should generally describe how wastes generated by Veolia PW through activities unrelated to licensed hazardous waste and reclamation activities Veolia PW will assure compliance with the requirements of chs. NR 662 through NR 679, Wis. Adm. Code for these wastes.

10. Container Storage

The FPOR should describe the inbound container management protocols and controls beginning from entry onto the facility through placement into licensed storage. This should address unloading, staging, container inspection, waste screening and acceptance, and the tracking and inventory management system.

The FPOR should describe the outbound container management protocols and controls beginning from licensed

storage, through the staging area, and through the departure of outbound vehicles. Controls and protocols for the staging of inbound and outbound containers should be addressed, including how and where containers that are temporarily quarantined pending the results from waste screening efforts are held.

The FPOR should address all of the container storage requirements in ss. NR 664.0170 through 664.0179, Wis. Adm. Code, including for example:

- Ensuring contains are inspected and maintained in good condition
- Maintaining containers in the closed condition
- Prevention of container damage, rupturing, and leaks.
- Inspections
- Secondary containment
- Setbacks for ignitable and reactive wastes.
- Prevention of incompatibility problems
- How containers will be palletized, arranged, and stacked, restrictions to avoid stability problems, and protocols to allow for inspection of containers and labels.

Different protocols for different types of containers (e.g. tankers/trailers, drums, cubic-yard boxes, totes, etc.) should be described.

The FPOR should address the aisle space requirements in s. NR 664.0037, Wis. Adm. Code. It is recommended that Veolia PW ensure that the aisle space protocols are developed in coordination with emergency response authorities and that this coordination is described in the FPOR.

The FPOR should describe how containers will be properly labelled and the minimum contents of labels, and how containers requiring special precautions, handling, or storage (e.g. incompatible and reactive wastes) will be labelled such that personnel at the facility are warned of the associated risks or restrictions.

The FPOR should address how 10-day generator containers and other waste containers in or near the licensed storage areas will be segregated and separately identified from hazardous waste containers in licensed storage status.

As indicated elsewhere in this letter, the FPOR should describe processes and controls regarding the processing of hazardous wastes from or in containers.

11. Tank Systems

Veolia PW is not currently licensed for tank storage or treatment. Please ensure that the FPOR states that this is the case going forward, for this application.

12. Treatment

a. Miscellaneous Units

Veolia is currently licensed for 3 miscellaneous treatment units (R3, R4, and R5) for the retorting of mercury-containing wastes. The FPOR should clearly describe the controls to ensure that retorting operations ensure compliance with hazardous waste requirements and protect human health and the environment, including but not limited to air management processes,

Subchapter X of ch. 664, Wis. Adm. Code governs miscellaneous units. The FPOR must clearly address:

- Each of the environmental performance standards in s. NR 664.0601, Wis. Adm. Code,

- The monitoring, analysis, inspection, response, reporting and corrective action in s. NR 664.0602, Wis. Adm. Code.

b. Waste Analysis Plan

The Waste Analysis Plan, to be based on the department's WAP Example, must include details about pre-and post-treatment waste analysis (see the section addressing waste treatment).

c. Current FPOR Provisions – Air Emissions Controls

Note that Veolia PW's current approved FPOR contains detailed procedures regarding the control of air emissions from the retort areas and equipment, developed as part of the license modifications (such as that approved on June 23, 2020) developed after the mercury releases that were reported to have occurred in July of 2017. We strongly recommend that the FPOR retain these sections. If changes are made, the FPOR transmittal package should clearly identify and them and describe the reason(s) for the changes. The following is a list of examples of FPOR sections subject to this recommendation:

4.5 MISCELLANEOUS UNIT – MERCURY RECOVERY/RETORT OPERATIONS

4.10 AIR EMISSION MANAGEMENT

5.0 PREPAREDNESS AND PREVENTION

8.14 RESPONSE PROCEDURES FOR AN AIR RELEASE

Appendix EE (MPAP)

13. Corrective Action Plan

In accordance with ch. NR 664, subch. F, Wis. Adm. Code, facilities seeking a hazardous waste operating license are required to undertake corrective action as necessary to protect human health and the environment. As specified in ss. NR 670.014(3) and (4), Wis. Adm. Code, the FPOR must provide information related to these corrective action requirements. For example, to ensure compliance with s. NR 664.0090(1), Wis. Adm. Code, the FPOR should identify all solid waste management units at the facility (regardless of the time at which waste was placed in the units), itemize any releases of hazardous waste or constituents from any solid waste management unit, and describe how the releases were remediated or include a plan for addressing the releases. If no such releases are known have occurred, this should be established in the FPOR. Such releases include but are not limited to releases to water, soil or air. Please also note that other notifications or reports for environmental releases or emissions may be required; for example, ch. NR 706, Wis. Adm. Code, requires notification of certain hazardous substance discharges.

In applicable, the FPOR should include a Corrective Action Plan, that describes in detail the current status of and projected future corrective action activities, including a description, schedule, and detailed cost estimate for corrective action activities, and establish a financial responsibility mechanism that covers the estimated cost for corrective action activities. It should include the following information, some of which may already be on file with the department's Remediation and Redevelopment (R&R) program.:

- a. The identification and clear description of all solid waste management units.
- b. A description of past investigations and assessments (e.g. RCRA Facility Assessments and RCRA Facility Investigations) for all solid waste management units.
- c. The current status of investigation and/or remediation activities, including a description of past and on-going site investigations and remedies that have been implemented, are occurring, and are anticipated, along with associated longer-term operation, maintenance, and monitoring activities.

- d. A description of the investigation and remediation activities that are projected to occur in the future (the “work description”) in order to achieve R&R case closure, broken out by logical tasks and sub-tasks to support the cost estimate.
- e. A schedule of corrective action activities projected through and beyond the proposed 10-year licensing period, extending at least until NR 700-series case closure is to be achieved for BRRTS case 02-46-563238 (and any other open R&R BRRTS cases).
- f. Detailed cost estimates for the projected remaining work in the work description. Cost estimates and schedules should consider and include ongoing corrective action-related activities, such as long-term operation of remedial systems, monitoring, and performance assessments. Cost estimates must provide sufficient detail and support as described in the “Closure” section of this letter.

In accordance with s. 291.37(2), Wis. Stats, the department may require by an order or license condition a period for achieving compliance with the corrective action requirements. It also requires that the owner or operator establish proof of financial responsibility for the estimated cost of corrective action. For facilities that do not have long-term care requirements, the department expects that financial assurance will be required for a “rolling window” of at least 10 years of corrective action work beyond the date of the new license, and that annual updates be developed.

Since the last FPOR (and subsequent 10-year renewal approval) was developed in 2015, new corrective action developments and site-specific corrective action license conditions have occurred. The events that led to these conditions, these conditions, and the subsequent reports required by these conditions, should be considered in developing the FPOR. Current FPOR section 2.6 (CORRECTIVE ACTION AND SOLID WASTE MANAGEMENT UNITS, including its text and tables) will need to be updated accordingly. It is recommended that the area(s) affected by the July, 2018 air release be referred to as an Area of Concern (AOC), not a SWMU; please see:

[System of Registries | US EPA](#)

14. Waste Analysis Plan

Sec. NR 664.0013(1)(c), Wis. Adm. Code, requires that information which must be known to properly treat, store or dispose of the waste be described in a Waste Analysis Plan (WAP).

The department recommends that Veolia PW’s FPOR contain a WAP that is patterned after the “Wisconsin’s Waste Analysis Plan (WAP) Example, Preliminary Version #2, Last Revised: January 27, 2023” (WAP Example), which is being provided with this letter. This had been previously provided to Veolia PW for review and comment. The WAP Example will need to be augmented with descriptions for activities and processes undertaken by Veolia PW that are not addressed in the WDNR WAP Example (such as stabilization).

WDNR’s expectation is for Veolia PW to present their proposed WAP using this example. Where Veolia PW proposes modifications to this example it should identify them using track changes in order to facilitate WDNR review, and include an explanation of the reason for the change. A digital version of Veolia PW’s proposed WAP (in Word, with these tracked changes and balloon comments shown) should be separately submitted along with the application. More detail is provided in the Introduction section of the WAP Example.

15. Drawings

General

The FPOR should include full size plan sheets (e.g. 24 inches by 36 inches) for all drawings that require a large size to see and read details. These should be folded and placed in pockets within the FPOR (rather than separately provided in “rolls”). These should be duplicated with folded 11” X 17” drawings for more ready reference within

the FPOR. All folded drawings should be positioned in a manner such that the drawing number and title are immediately visible. It may be appropriate to place most drawings in a separate Appendix.

Please ensure that all maps and drawings contain the necessary detail, such as following elements:

- Title and drawing number in the title block
- Legend (or key) for every symbol on the map/drawing
- Scale
- Directions (compass rose)
- Location and labeling of key areas
- Key dimensions
- Symbols (or labels) to signify certain areas of interest
- Date of publication (and revision dates as appropriate)
- P.E. stamp as applicable
- Source of information (as applicable).

Specific Drawings

In addition to the drawings specified in the regulations (e.g. in ss. NR 670.13 and 670.14, Wis. Adm. Code), we anticipate that drawings depicting the following will be needed:

- Storm sewer piping, including the location of inlets.
- Sanitary sewer piping, including any inlets within or near areas where hazardous wastes are handled.
- Secondary containment system layouts and details for each licensed unit or area [see for example ss. NR 670.015(1) and NR 670.016(7), Wis. Adm. Code].
- Secondary containment systems for inbound and outbound container staging areas and areas where bulk wastes are received, unloaded, and loaded.
- Fire suppression system information and fire ratings for walls around or adjacent to each area where hazardous wastes are handled.
- For each container storage area, the limits of the area, ramps, the proposed configuration of rows/racks and associated aisle spaces.
- The location of and diagrams (e.g. P&ID schematics) for all tanks and Subch. BB tank system equipment/components (see for example s. NR 670.016(4), Wis. Adm. Code).
- The location of and diagrams (e.g. P&ID schematics) for all miscellaneous treatment units and their ancillary equipment, including for example, the retorting room, retort units, air handling/treatment equipment and controls, condensate handling systems.
- Engineering drawings (including plan and cross-sectional views as needed) that clearly depict each tank and its appurtenances, such as skirts, top-of-tank appurtenances, access ports/manways, ladders/scaffolds, vents, agitators, etc.

16. Environmental Assessment

The department cannot issue a determination on a feasibility and plan of operation report without having completed the determination regarding the need for an environmental impact statement established in s. 289.25, Stats. The department's requirements for this environmental impact review are established in ch. NR 150, Wis. Adm. Code. Specific minimum information requirements for an NR 150 integrated analysis that must be included in the FPOR are found in s. NR 670.014(2)(x)2., Wis. Adm. Code. The FPOR should adequately address each of the items specified in this code section.

Veolia PW may want to consult and use prior hazardous waste licensing correspondence (such as FPORs and

approvals) that contain environmental impact assessment information that remains applicable, accurate and up to date. If the updated FPOR is not proposing any significant changes in hazardous waste operations and any new construction, please clearly point this out because it is relevant to the environmental assessment process.

In addressing social impacts (see NR 670.014(2)(x)2.d.4), please include an environmental justice analysis and your recommended mitigation and outreach activities. See <https://www.epa.gov/environmentaljustice>. We recommend that this present and discuss EJScreen results for a one mile radius and three mile radius.

17. Needs

The department is also required by s. 289.28, Wis. Stats., to determine the need for a hazardous waste facility prior to its construction. As specified in s. NR 670.014(2)(x)3., Wis. Adm. Code, the FPOR must address each of the issues listed in s. 289.28(1), Wis. Stats. If you believe any of these issues are not applicable, please state such.

18. Noncompliance with Plans or Orders

This requirement only applies to new facilities and expansions of existing facilities.

Under s. 289.34, Stats., the department may not approve construction of a solid waste disposal facility or hazardous waste facility if the applicant or any person owning 10% or greater legal or equitable interest in the applicant or the assets of the applicant either: 1) is named in or is subject to a plan approved, or an order issued, by the department regarding any solid waste facility or hazardous waste facility in this state and is not in compliance with the terms of the plan or order; or, 2) owns or previously owned a 10% or greater legal or equitable interest in a person or the assets of a person who is named in and subject to a plan approved, or an order issued, by the department regarding any solid waste facility or hazardous waste facility in this state and the person is not in compliance with the terms of the plan or the order.

If applicable, as specified in s. NR 670.014(2)(x)1., Wis. Adm. Code, the FPOR must include all information needed to demonstrate that this statutory provision is met. If Veolia PW is not proposing new construction (such that 289.34 is not applicable), the FPOR should clearly assert this.

19. Closure

The FPOR must include the facility's Closure Plan as required in s. NR 664.0112, Wis. Adm. Code. The closure plan must be sufficiently detailed to, and organized in such a way as to support the closure cost estimate.

Closure costs should be certified by a qualified professional engineer.

20. Cost Estimates

Cost estimates must be included for closure and corrective action. This cost estimates should:

- a. be based on utilizing a third party (or third parties) to properly execute all closure activities;
- b. include third party costs to manage and administer the work (e.g. project management, procurement, contract administration, invoice review and payment, etc.);
- c. not consider cost efficiencies or special pricing for work that might otherwise be performed or facilitated by Licensee;
- d. include a minimum 10% contingency for unanticipated or unforeseen work;
- e. be broken out by discreet tasks and sub-tasks and include unit costs, quantities, and extended costs for each task and subtask; the tasks and subtasks shall be easily identified within the closure plan (for closure costs) and the corrective action plan/description (for corrective action costs).
- f. describe the basis for or source of the number of units and unit costs used in the cost estimate;

- g. clearly indicate the year for which each unit cost is based, such that inflationary adjustments can be accurately applied; and include a cost summary in tabular format that:
- (i) contains separate rows for each separate cost item, or task (and subtask as appropriate). Each task/subtask name and scope of work shall be as identified and described, respectively, in the closure plan;
 - (ii) contains separate columns that identify the task name; the estimated costs for that task including units, number of units, unit costs, and extended subtotals;
 - (iii) is also provided electronically in a spreadsheet format that is unprotected;
 - (iv) as applicable, incorporates separate tables for each year, and a summary table for all years;
 - (v) clearly accounts for and presents inflationary adjustments;
 - (vi) identifies the date of the cost estimate.

Please ensure that all cost estimates/unit costs represent current year (e.g. 2024) costs, and that the year for which the costs are current is clearly identified.

21. Environmental Monitoring

Conditions 65 – 69 of the September 4, 2015 final determination contains conditions relating to routine mercury monitoring of facility soils, sediment, storm water, and air (referred to as “Industrial Hygiene Air Monitoring in FPOR section 7.1.2.2).

The FPOR must include details of Veolia PW’s proposed routine environmental sampling and analysis for mercury in soils, sediment, storm water, and air. One purpose of this monitoring is to identify any airborne releases of mercury from mercury retorting operations.

22. Technical Adequacy

The department will evaluate technical adequacy as part of its FPOR completeness review. In general, this means that the FPOR should describe how requirements are or will be met, rather than (more simply) stating that they will be met. The following are a few examples of topics not detailed elsewhere in this letter for which explanations of “how” the requirements will be met should be provided:

- Imports: Sec. NR 664.0012, Wis. Adm. Code, establishes notice requirements for imported wastes.
- Waste Analysis: Sec. NR 664.0013, Wis. Adm. Code, requires that the owner or operator obtain a detailed chemical and physical analysis of a representative sample of the wastes, which must be known to treat, store or dispose of the waste according to chs. NR 664 and 668, Wis. Adm. Code.
- Security: NR 664.0014, Wis. Adm. Code establishes standards to prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of the facility.
- Inspections: Sec. NR 664.0015(4), Wis. Adm. Code, requires that records include date and nature of any repairs or other remedial actions. See also (for example) the unit-specific inspection requirements in NR 664.0174, Wis. Adm. Code (for containers) and NR 664.0195, Wis. Adm. Code (for tank systems).
- Training: Sec. NR 664.0013(1)(c), Wis. Adm. Code, requires training for all personnel (1) in or near the licensed units (including employees, contractors, vendors, etc.) that perform duties that ensure compliance with ch. NR 664, Wis. Adm. Code facility requirements, or (2) need to be familiar with any element of the contingency plan.
- Ignitable, reactive, or incompatible wastes: Sec. NR 664.0017, Wis. Adm. Code, addresses precautions to prevent accidental ignition or reactions when handling these sorts of wastes.
- Preparedness and Prevention: Subch. C of NR 664, Wis. Adm. Code establishes standards to minimize the possibility of a fire, explosion or any unplanned sudden or non-sudden release of hazardous waste or

hazardous waste constituents to air, soil or surface water which could threaten human health or the environment. This includes, for example, standards for equipment, aisle space, and arrangements with local authorities.

- Manifest System, Recordkeeping and Reporting” Subch. E of NR 664, Wis. Adm. Code, establishes various requirements regarding manifests, the operating record, annual reports, and other reports.

23. Confidentiality

If any information is submitted under a claim of confidentiality, the confidentiality requirements of s. 291.15, Stats., and ss. NR 2.19 and NR 2.195, Wis. Adm. Code, must be followed. Please note that this process is quite rigorous.

24. Closing Remarks

The department may require additional or modified information based on its review of Veolia PW’s FPOR or other findings.

If you have any questions regarding the items discussed in this letter or the licensing process, please contact Doug Coenen at (608) 264-9258 or by email at douglas.coenen@wisconsin.gov.

Regards,



Douglas W. Coenen, Hazardous Waste Engineer
Hazardous Waste Prevention & Management Section
Waste and Materials Management Program

Attachments (provided in separate digital files):

License Checklist, dated February 19, 2024

WAP Example (Preliminary Version #2, dated January 27, 2023)

cc: Mathew Scudder, Veolia PW
Ben Petrus, WDNR
Mike Ellenbecker, DNR
Norberto Gonzalez, EPA Region 5

Appendix B

Pre-Application Meeting Documentation

Capital Newspapers Proof of Publication Affidavit

Ad #: 2044673 Price: \$40.28 Ad ID: Public Notice for 5/9/13

Retain this portion for your records.

Please do not remit payment until you receive your advertising invoice.

Mail to:

Veolia ES Technical Solutions, LLC
Kevin D. Shaver
1275 Mineral Springs Drive
Port Washington, WI 53074

STATE OF WISCONSIN

Dane County

SS.

SHARON SCALLON

being duly sworn, doth depose and say that
he (she) is an authorized representative of
Capital Newspapers, publishers of

Wisconsin State Journal

a newspaper, at Madison, the seat of government of said State,
and that an advertisement of which the annexed is a true
copy, taken from said paper, was published therein on
April 4th, 2013

PWSJ

(Signed)

(Title)

Principal Clerk

Subscribed and sworn to before me on

Notary Public, Dane County, Wisconsin

My Commission expires April 15th, 2015

92.5 WBWI-FM / CLASSIC COUNTRY AM 1470 WBKV

CLIENT: VEOLIA ES TECHNICAL SOLUTIONS

START: 04/09/13

TITLE: PUBLIC MEETING

END: 04/09/13

CO-OP:

AV#: LIVE READ

A.E.: PAUL CLEMENTS

LENGTH: :60

WRITER: CLIENT/PAUL NOTES:

DATE: 04/01/13 EMAIL TO:

COPIES: # CD's: Mp3:

HERE'S A PUBLIC NOTICE FROM VEOLIA ES TECHNICAL SOLUTIONS IN
PORT WASHINGTON. ON A FEASIBILITY AND PLAN OF OPERATION REPORT.
PURSUANT TO NR 670.431, WISCONSIN ADMINISTRATION CODE, VEOLIA ES
TECHNICAL SOLUTIONS, L.L.C., LOCATED AT 1275 MINERAL SPRINGS
DRIVE IN PORT WASHINGTON, WISCONSIN 53074 WILL BE HOSTING A
PUBLIC MEETING TO DISCUSS THE FORTHCOMING SUBMITTAL OF THEIR
FEASIBILITY AND PLAN OF OPERATION REPORT (FPOR) TO THE WDNR.
THE MEETING WILL TAKE PLACE ON THURSDAY, MAY 9, 2013, 9:00 AM TO
10:00 AM AT THE HOLIDAY INN HARBORVIEW, 135 E GRAND AVENUE, PORT
WASHINGTON, WISCONSIN 53074. THE FPOR SUBMITTAL IS REQUIRED BY
WDNR REGULATIONS FOR RENEWAL OF THE OPERATING LICENSE OF THE
SOLID AND HAZARDOUS WASTE FACILITY. NO DISPOSAL OCCURS AT THIS
LOCATION. THE FACILITY HAS BEEN PERMITTED AND OPERATING SINCE
1989 AND THE CURRENT LICENSE EXPIRES IN FEBRUARY 2014. DURING
THE MEETING THE LICENSE RENEWAL APPLICATION WILL BE DISCUSSED
AND ANY QUESTIONS FROM THE COMMUNITY WILL BE ADDRESSED. IF
YOU HAVE ANY QUESTIONS REGARDING THE MEETING OR WOULD LIKE
TO REQUEST SPECIAL ACCESS TO PARTICIPATE IN THE MEETING, PLEASE
CONTACT KEVIN SHAVER, VEOLIA ES TECHNICAL SOLUTIONS, L.L.C., 1275
MINERAL SPRINGS DRIVE, PORT WASHINGTON, WISCONSIN 53074, OR CALL
262-243-89-HUNDRED.

INVOICE

PORT PUBLICATIONS, INC.
 125 E. MAIN STREET • P.O. BOX 249
 PORT WASHINGTON, WISCONSIN 53074
 (262) 284-3494 (262) 377-1250

Invoice

Invoice #: 00184734

Bill To:

Ship To:

VZOLIA ENVIRONMENTAL SERVICES
 1275 MINERAL SPRINGS DR
 PORT WASHINGTON, WI 53074

VZOLIA ENVIRONMENTAL SERVICES
 1275 MINERAL SPRINGS DR
 PORT WASHINGTON, WI 53074

SALES PERSON	YOUR ORDER NO.	SHIP VIA	REQ	POB	SHIP DATE	TERMS	DATE	PG.
HOLLY OSTERTANN						Net 30	4/12/2013	1
QUANTITY	ITEM NO.	DESCRIPTION	PRICE	UNIT	DISC %	EXTENDED PRICE	TX	
1	1	FEASIBILITY AND PLAN OF OPERATION REPORT (14 INCH) 4/4	\$291.90			\$291.90		
Please write your invoice number on your check. Thank you!						ORDER AMOUNT SALES TAX TOTAL AMOUNT PAID TODAY	\$291.90 \$0.00 \$291.90 \$0.00	
						BALANCE DUE	\$291.90	

After relative inactivity for more than a year, village officials welcomed the final of business brought before the CDA. "This is the kind of CDA meeting I would like to have, with vacant buildings being sold to tenants and existing buildings being sold," said Village Administrator Dawn Wagner. Haroldson predicted the business sale might just be beginning, too, thanks to the loan program the village recently initiated with Port Washington State Bank. The loan program is making up

the company has a working relationship with Threshold Industries, a West Bend-based sheltered workshop for workers with disabilities. The CDA also approved the relocation of Broadband Solutions into the business park in a 5,000-square-foot building at 450 N. Progress Dr. The company, owned by Brent Sager, is a cable subcontractor that works with Time Warner Cable. The building will be used for storage of equipment and materials. Yet another approval was granted to

business started in 2007 in West Bend. It and Robert Haas told village officials the company owners Richard Vanderkin building at 250 N. Progress Dr. is moving into the vacant 9,600-square-foot the CDA was Custom Color & Filling, which is the largest of the ventures supported by the economy. last month an indication of the improving by the Community Development Authority in a cluster of new businesses approved Village of Saukville officials are call-

WISCONSIN PRESS PHOTO

WISCONSIN PRESS PHOTO THURSDAY, APRIL 4, 2013 11:55

positions in 2011.

Lashner has been the superintendent of Port Washington schools since 2009. He previously served as superintendent of the Kimberly School District.

The Oakfield School District received 36 applications for the superintendent's job. Recruitment and initial screening of applicants was done by BWP & Associates, a consulting firm based in the Bronx.

BWP pared the field to six candidates who were interviewed last week. At that time, Ziegler said he was pleased with the quality of applicants, adding that he didn't think he would have any problem finding an ideal person for the job.

Ziegler's last day with the district will be June 30. Ziegler said his contract is not required to end work until July 1 but is likely to spend time with Oakfield staff members before then during an orientation process.

PUBLIC NOTICE

FEASIBILITY AND PLAN OF OPERATION REPORT

Pursuant to NR 670.431, Wis. Adm. Code, Veolia ES Technical Solutions, L.L.C. located at 1275 Mineral Springs Drive in Port Washington, Wisconsin 53074 will be hosting a public meeting to discuss the forthcoming submittal of their Feasibility and Plan of Operation Report (FPOR) to the WDNR.

The meeting will take place on
Thursday, May 9, 2013 • 9:00 AM – 10:00 AM
 Holiday Inn Harborview
 135 E Grand Avenue
 Port Washington, Wisconsin 53074

The FPOR submittal is required by WDNR regulations for renewal of the operating license of the solid and hazardous waste facility. No disposal occurs at this location. The facility has been permitted and operating since 1989 and the current license expires in February 2014. During the meeting the license renewal application will be discussed and any questions from the community will be addressed.

If you have any questions regarding the meeting or would like to request special access to participate in the meeting, please contact:

KEVIN SHAVER

Veolia ES Technical Solutions, L.L.C.
 1275 Mineral Springs Drive
 Port Washington, WI 53074
 262-243-8900

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- Software Installation
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Honesty, Integrity,
 Extreme Value

414-208-4150
 Call or Click TODAY!

www.RLPC.us

Date: 05/09/2013
Time: 9:00 am to 10:00 am
Location: Holiday Inn, Harborview
135 E Grand Avenue
Port Washington, Wisconsin 53074

[illegible]

Appendix C
Local Approval Request and
WI Waste Facility Siting Board Documentation



**State of Wisconsin
Waste Facility Siting Board**

5005 University Avenue, Suite 201, Madison, WI 53705-5400

Phone: (608) 266-7709

Fax: (608) 264-9885

e-mail: dhamail@wisconsin.gov

James Schuerman
Chairman

David H. Schwarz
Executive Director

March 25, 2013

CERTIFIED MAIL

Kevin Shaver
Operations Manager
Veolia ES Technical Solutions, L.L.C
1275 Mineral Springs Drive
Port Washington, WI 53074

Mark Grams
City of Port Washington Clerk
100 West Grand Avenue
Port Washington, WI 53074

Amanda Schaefer
Town of Grafton Clerk
1230 11th Avenue
Grafton, WI 53024

Jenny Schlenvogt
Town of Port Washington Clerk
3715 Highland Drive
Port Washington, WI 53074

Julianne Winkelhorst
Ozaukee County Clerk
121 West Main Street
P.O. Box 994
Port Washington, WI 53074

Re: Veolia ES Technical Solutions, L.L.C permit renewal for hazardous waste storage;
WFSB Case 219

To whom it may concern:

On January 17, 2013 the Waste Facility Siting Board received a copy of a written request for local approvals sent by Veolia ES Technical Solutions, L.L.C in Port Washington, WI. to the City of Port Washington Clerk, the Town of Grafton Clerk, the Town of Port Washington Clerk, and the Ozaukee County Clerk, regarding permit renewal of its hazardous waste facility located in Port Washington, Wisconsin. This request was received by the Town of Port Washington, the Town of Grafton, the City of Port Washington, and Ozaukee County on January 17th, 2013.

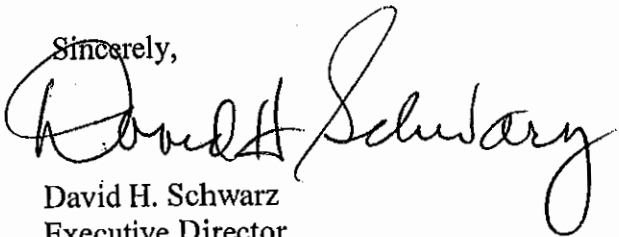
The law allows an affected municipality to participate in the negotiation process if the governing body adopts a siting resolution and appoints members of the local committee within 60 days after the municipality receives written requests by the applicant. Wis. Stats. § 289.33(6)(a).

In this case, neither the City of Port Washington, the Town of Grafton, the Town of Port Washington, nor Ozaukee County took the action required to participate in the negotiation and arbitration process.

As a result, the Waste Facility Siting Board considers this case closed and Veolia Technical Solutions, L.L.C may continue to seek permit renewal of its hazardous waste storage facility and is not required to negotiate or arbitrate under Wis. Stats. § 289.33

If you have any questions, please contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "David H. Schwarz". The signature is fluid and cursive, with the first name "David" being more prominent and the last name "Schwarz" written in a continuous script.

David H. Schwarz
Executive Director

DHA; br

Cc: Michael Ellenbecker, Wisconsin Department of Natural Resources



**State of Wisconsin
Waste Facility Siting Board**

5005 University Avenue, Suite 201, Madison, WI 53705-5400

Phone: (608) 266-7709

Fax: (608) 264-9885

e-mail: dhamail@wisconsin.gov

James Schuerman
Chairman

David H. Schwarz
Executive Director

January 29, 2013

CERTIFIED MAIL

Mr. Mark Grams
City of Port Washington Clerk
100 West Grand Avenue
Port Washington, WI 53074

Ms. Amanda Schaefer
Town of Grafton Clerk
1230 11th Avenue
Grafton, WI 53024

Ms. Jenny Schlenvogt
Town of Port Washington Clerk
3715 Highland Drive
Port Washington, WI 53074

Ms. Julianne B. Winkelhorst
Ozaukee County Clerk
121 West Main Street
P.O. Box 994
Port Washington, WI 53074

Re: Veolia ES Technical Solutions, L.L.C permit renewal for hazardous waste storage

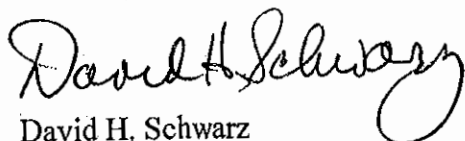
To whom it may concern:

On January 17, 2013 the Waste Facility Siting Board received a copy of a written request for local approvals sent by Veolia ES Technical Solutions, L.L.C in Port Washington, WI. to the City of Port Washington Clerk, the Town of Grafton Clerk, the Town of Port Washington Clerk,

and the Ozaukee County Clerk, regarding permit renewal of its hazardous waste facility located in the Port Washington, Wisconsin. This request was received by the Town of Port Washington, the Town of Grafton, the City of Port Washington, and Ozaukee County on January 17th, 2013.

Within 60 days after a municipality receives this written request from the applicant, an affected municipality must adopt a siting resolution and appoint members to the local committee if it wants to participate in the negotiation-arbitration process. Wis. Stats. § 289.33(6)(a). A copy of the siting resolution and the names of the members who are appointed to the committee must be sent to the Waste Facility Siting Board within seven days after the municipality adopts the siting resolution. Each member appointed to a local committee shall file a statement of economic interest with the board. A Statement of Economic Interest form can be found on our website at <http://dha.state.wi.us>.

Sincerely,

A handwritten signature in black ink, appearing to read "David H. Schwarz", written in a cursive style.

David H. Schwarz
Executive Director

DHA;br

cc: Kevin Shaver, Operations Manager, Veolia Technical Solutions, L.L.C.
Michael Ellenbecker, Wisconsin Department of Natural Resources



*File Copy
105 1/15/13*

**TECHNICAL SOLUTIONS
NORTH AMERICA**

January 15, 2013

Mr. Mark Grams
City Clerk
City of Port Washington
100 West Grand Avenue
Port Washington, WI 53074
Sent USPS Certified Mail

Ms. Jenny Schlenvogt
Township Clerk
Town of Port Washington
3715 Highland Drive
Port Washington, WI 53074
Sent USPS Certified Mail

Ms. Amanda Schaefer
Township Clerk
Town of Grafton
1230 11th Avenue
Grafton, WI 53024
Sent USPS Certified Mail

Ms. Julianne B. Winkelhorst
County Clerk
Ozaukee County
121 West Main Street
P. O. Box 994
Port Washington, WI 53074
Sent USPS Certified Mail

RE: Local Approval Request
Veolia ES Technical Solutions, L.L.C.
1275 Mineral Springs Drive
Port Washington, WI 53074
EPA I.D. # WID988566543

Dear Clerks:

Veolia ES Technical Solutions, L.L.C. (Veolia) has been operating a hazardous waste storage facility in Port Washington since 1990. The facility has been operating under permits and licenses issued by the Wisconsin Department of Natural Resources (WDNR) during this time. During 2013, Veolia will work with the WDNR to review our operating permit and issue a new permit in 2014. The first part of the process is to contact the local or affected municipalities to determine if any new or additional requirements would apply to our facility. The requirement for Veolia to make this notification is outlined in Wisconsin Statute 289.22. The State of Wisconsin Waste Facility Siting Board has issued the enclosed "Standard Notice" to inform a municipality of the actions and deadlines required to qualify for participation in renewal process.

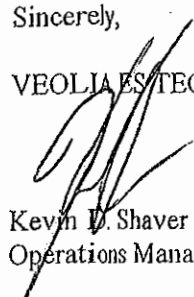
Over the past years, Veolia has provided many services to local businesses and households throughout Ozaukee County. The services include a permanent household hazardous waste, fluorescent lamps and electronics drop off site. Under the permit renewal, these services will continue.

Veolia is seeking confirmation from each municipality that we are complying with any local requirements. If your municipality is planning to issue Veolia a waiver from local approval requirements, please notify us regarding this determination.

Veolia looks forward to continuing our presence in Port Washington and Ozaukee County. If you have any questions regarding this notification and the permit renewal application process, please contact me at 262-243-8909.

Sincerely,

VEOLIA ES/TECHNICAL SOLUTIONS, L.L.C.



Kevin D. Shaver
Operations Manager

Enclosure: State of Wisconsin Waste Facility Siting Board Standard Notice

cc: Mr. James W. Schuerman, Chairman, State of Wisconsin Waste Facility Siting Board
Mr. Michael Ellenbecker, Wisconsin Department of Natural Resources

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ms. Jenny Schlenvogt
Township Clerk
Town of Port Washington
3715 Highland Dr.
Port Washington, WI 53074

2. Article Number

(Transfer from service label)

7008 3230 0001 4835 6961

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

Jenny Schlenvogt

☒ Agent☐ Addressee

B. Received by (Printed Name)

Jenny Schlenvogt

C. Date of Delivery

1-17-13

D. Is delivery address different from item 1?

If YES, enter delivery address below:

☐ Yes☒ No

3. Service Type

☒ Certified Mail☐ Express Mail☐ Registered☐ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ms. Amanda Schaefer
Township Clerk
Town of Grafton
1230 11th Ave.
Grafton, WI 53024

2. Article Number

(Transfer from service label)

7008 3230

PS Form 3811, February 2004

Domestic Return Receipt

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Mr. Mark Grams
City Clerk
City of Port Washington
100 W. Grand Ave.
Port Washington, WI
53074

2. Article Number

(Transfer from service label)

7008 3230 0001 4834 9246

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

Mark Grams

☒ Agent☐ Addressee

B. Received by (Printed Name)

Mark Grams

C. Date of Delivery

1-17-13

D. Is delivery address different from item 1?

If YES, enter delivery address below:

☐ Yes☐ No

3. Service Type

☒ Certified Mail☐ Express Mail☐ Registered☐ Return Receipt for Merchandise☐ Insured Mail☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Ms. Julianne B. Winkelhorst
County Clerk
Ozaukee County
121 W. Main St.
P.O. Box 994
Port Washington, WI
53074

2. Article Number

(Transfer from service label)

7008 3230

PS Form 3811, February 2004

Domestic Return Receipt



**State of Wisconsin
Waste Facility Siting Board**

5005 University Avenue, Suite 201, Madison, WI 53705-5400

Phone: (608) 266-7709

Fax: (608) 264-9885

e-mail: dha.mail@wisconsin.gov

James W. Schuerman
Chairman

David H. Schwarz
Executive Director

STANDARD NOTICE

**TIME LIMITS AND REQUIREMENTS FOR MUNICIPALITIES
TO PARTICIPATE IN THE NEGOTIATION AND ARBITRATION PROCESS
FOR THE SITING OF A SOLID OR HAZARDOUS WASTE FACILITY
UNDER SEC. 289.33, WISCONSIN STATUTES.**

PLEASE READ ALL PAGES CAREFULLY.

This notice informs a municipality of the actions and deadlines required to qualify for participation in negotiations and arbitration concerning the proposed siting of all new or expanded solid or hazardous waste facilities in the state of Wisconsin.

This standard notice shall be submitted with any written requests for local approvals by the applicant to the clerk of each affected municipality and to the main public library in each affected municipality. s. 289.22(1m)(2) and s. 289.32, Wis. Stats.

Who is the Waste Facility Siting Board?

The Waste Facility Siting Board is an impartial body composed of six members. These members include the secretaries, or their formally appointed designees, of the Departments of Agriculture, Trade and Consumer Protection; Commerce; and Transportation; and two town elected officials and one county elected official appointed by the governor for three year terms.

What does the Waste Facility Siting Board do?

The Waste Facility Siting Board administers the negotiation and arbitration process for the siting of every solid and hazardous waste facility in the state of Wisconsin.

The board's authority is created by law in Chapter 289, Subchapter III, Wis. Stats. The intent of the law is to create and maintain a comprehensive and effective policy of negotiation and arbitration between an applicant for a waste facility license and a local committee representing the affected municipalities.

Who is an Applicant?

An "applicant" is any person applying for a license or the owner or operator of a facility.

What is an Affected Municipality?

An affected municipality is any town, village, city, or county:

- (a) where any or all of the proposed waste site will be located, or
- (b) whose boundary is within 1500 feet of the facility designated in the feasibility report for the disposal of solid waste or the treatment, storage or disposal of hazardous waste.

An applicant that is a municipality or is under contract with a municipality for development of the site, is not considered an affected municipality for purposes of negotiation.

What is an Additional Municipality?

An additional municipality is any town, city, village, or county which does not qualify as an affected municipality but is included in the negotiation and arbitration process by written agreement of the applicant and the participating affected municipalities.

How does the negotiation-arbitration process begin?

The process is initiated by the applicant. Before submitting a feasibility report to the Department of Natural Resources (DNR), the applicant must submit by certified mail to the clerk of each affected municipality a written request for specification of all applicable local approvals. The municipality has 15 days to respond.

What is a "local approval"?

The term "local approval" is defined in s. 289.33(3)(d), Stats. It essentially means any requirement, restriction, condition, or prohibition imposed by a municipality on a waste facility site by ordinance, resolution, or regulation.

The law gives special weight to "pre-existing local approvals." Pre-existing local approvals are those that have been in effect at least 15 months before the applicant submits to DNR an initial site report or a feasibility report, whichever happens first. A new or expanded waste facility is subject to pre-existing local approvals unless specified as inapplicable in a negotiated agreement or an arbitration award. A new or expanded waste facility is not subject to other local approvals unless specified as applicable in a negotiated agreement.

If an Affected Municipality wants to negotiate with the applicant concerning the site what is required?

There are three requirements.

First, an affected municipality must pass a siting resolution within 60 days of receipt of the applicant's initial written request for local approvals. If this deadline is missed, a municipality

may not participate in negotiations. A copy of the siting resolution must be sent to the board within 7 days of passage.

Each affected municipality that wishes to negotiate with the applicant about the proposed facility must pass a siting resolution which shall state the following:

- (1) the name and location of the municipality,
- (2) the name and location of the applicant,
- (3) the specific location of the proposed facility, and
- (4) the municipality's intent to negotiate and, if necessary, arbitrate with the applicant concerning the proposed facility.

Second, an affected municipality must appoint members to the local committee within 60 days of receipt of the applicant's request for local approvals. Names and addresses of local committee members must be sent to the Waste Facility Siting Board within 7 days of appointment.

Each affected municipality that wishes to negotiate with the applicant must appoint members to the local negotiating committee. Each town, village, or city where all or part of the proposed waste facility is to be located may appoint 4 members, or 2 more than the total number of all other members, whichever number is greater; no more than 2, however, may be elected officials or municipal employees. Each county where all or any part of the proposed waste facility will be located may appoint 2 members. Every other town, village, city, or county within 1500 feet of the proposed waste facility may appoint 1 member. Appointment of members may be included in the siting resolution or in a separate resolution.

Third, each member appointed to the local committee must file with the Waste Facility Siting Board a Statement of Economic Interests within 15 days of appointment. A member who fails to file a Statement of Economic Interests may not serve on the local committee.

These forms are available at no cost from the Waste Facility Siting Board.

What is required if an Additional Municipality wants to negotiate with the applicant concerning the site?

There are four requirements.

First, an additional municipality must receive written agreement of all parties to be added to the process.

Second, an additional municipality must pass a siting resolution within 30 days of the agreement between the parties to allow participation by the additional municipality. A copy of the siting resolution must be sent to the board within 7 days of passage.

The siting resolution must state the following:

- (1) the name and location of the municipality,
- (2) the name and location of the applicant,
- (3) the specific location of the proposed facility, and
- (4) the municipality's intent to negotiate and, if necessary,

arbitrate with the applicant concerning the proposed facility.

Third, an additional municipality must appoint one member to the local committee within 60 days. The name and address of the local committee member must be sent to the Waste Facility Siting Board within 7 days of appointment.

Fourth, the appointed member to the local committee must file with the Waste Facility Siting Board a Statement of Economic Interests within 15 days of appointment. A member who fails to file a Statement of Economic Interests may not serve on the local committee.

These forms are available at no cost from the Waste Facility Siting Board.

When may negotiations begin?

Negotiations may begin at any time after notification by the Waste Facility Siting Board. The board will send a notification of participation to the applicant and the clerk of each participating municipality within 5 days after the board receives copies of the resolutions and names and addresses of members appointed to the local committee, or within 72 days after all affected municipalities have received written request for local approvals. This notice will identify the participating municipalities, identify the names of the members of the local committee, and inform the parties that negotiations may begin.

If, for error or change in plans, the applicant must add any other affected municipality following the board's notification of participation, that affected municipality shall have the same rights and obligations as outlined above. The board may issue an order delaying negotiations until that affected municipality has time to act. This procedure is outlined in s. 289.33(6)(c), Stats.

Either the applicant or the local committee may initiate negotiations. The time and place of negotiating sessions are determined by agreement between the applicant and the local committee. Negotiating sessions must be open to the public.

What issues can be negotiated?

Any subject may be negotiated except the need for the facility and any proposal that would make the applicant's responsibilities less stringent than required by the Department of Natural Resources. Either party may petition the board in writing for a determination as to whether a proposal is negotiable. The board will conduct a hearing and issue a binding decision in 14 days.

If a negotiated settlement is reached, what is required?

There are two requirements.

First, the agreement must be approved by all appropriate bodies.

An appropriate body is the governing body of each town, city, or village where all or a portion of the waste facility is to be located. If the agreement is approved by all of the appropriate bodies, the agreement is binding on all participating municipalities.

Second, if the agreement is approved, the applicant shall send a copy or notice of any negotiated agreement to the Waste Facility Siting Board and to the Department of Natural Resources within 10 days after the agreement is approved by all appropriate bodies. If the agreement is not approved by all of the appropriate bodies, the agreement is void. The parties may resume negotiations, begin mediation, or initiate arbitration.

Who initiates mediation?

Either party may request a mediator at any time during the negotiation.

Who is the mediator?

The board maintains a list of competent, impartial, disinterested persons consisting of lawyers, retired judges, and professional mediators who serve as mediators.

Who chooses the mediator?

Upon receipt of a request for a mediator, the board will immediately send the parties a list of 5 mediators. The parties shall alternately strike names until one name is left who will be appointed by the board.

What is the role of the mediator?

The role of the mediator is to encourage a voluntary settlement. The mediator may not impose a settlement on either party.

Who pays for the mediator?

Unless specified in the negotiated agreement or the arbitration award, the costs of the mediator will be shared equally by the applicant and the local committee.

What happens if the mediator fails to bring settlement?

The parties may resume negotiations or initiate arbitration.

Who initiates arbitration?

The applicant or the local committee may petition the board jointly or separately to initiate arbitration.

Arbitration may not be initiated until at least 120 days after the appointment of the local committee.

A statement in response to a unilateral arbitration petition must be filed within 14 days.

What issues can be arbitrated?

Only eight issues can be arbitrated. These issues are:

1. Compensation to any person for substantial economic impacts which are a direct result of the facility including insurance and damages not covered by the waste management fund.
- 1m. Reimbursement of reasonable costs, but not to exceed \$20,0000, incurred by the local committee relating to negotiations, mediation and arbitration activities under this section.
2. Screening and fencing related to the appearance of the facility. This item may not affect the design capacity of the facility.
3. Operational concerns including, but not limited to, noise, dust, debris, odors and hours of operation but excluding design capacity.
4. Traffic flows and patterns resulting from the facility.
5. Uses of the site where the facility is located after closing the facility.
6. Economically feasible methods to recycle or reduce the quantities of waste to the facility. At facilities for which the applicant will not provide or contract for collection and transportation services, this item is limited to methods provided at the facility.
7. The applicability or non-applicability of any pre-existing local approvals.

If requested by either party, the board will rule on the arbitrability of a specific issue.

Once initiated, how does the arbitration process work?

Within 15 days of receipt of a petition to initiate arbitration, the board will issue a decision either to have the parties continue negotiation for at least 30 days, delay arbitration until a feasibility report is submitted, or order the parties to submit their final offers within 90 days. If, when ordered by the board, the applicant fails to submit a final offer within 90 days, the applicant may not construct or operate the facility. If the local committee fails to submit a final offer in 90 days the local committee loses all rights to further negotiation and the facility is not subject to any local approval.

Within 30 days after the last day for submitting final offers, the board shall conduct a public meeting for the parties to explain their final offers.

Within 90 days after the last day for submitting final offers, the board will issue an arbitration award. If the board fails to issue an award because it lacks the necessary five votes, the governor will issue an arbitration award within 120 days after the last day for submitting final offers.

The board's arbitration award is binding on the applicant and the participating municipalities.

The information presented here serves as a guide to help affected and additional municipalities comply with the negotiation-arbitration laws concerning siting of solid and hazardous waste facilities under s. 289.33, Stats. For specific legal advice, or changes in the statute or administrative rules, an applicant or affected municipality should consult its attorney or contact the Waste Facility Siting Board, 5005 University Avenue, Suite 201, Madison, Wisconsin 53705-5400, (608) 266-7709, FAX: (608) 264-9885.

STANDARD NOTICE

Revised: 01/31/11

G:\DOCS\WFSBD\BOARD DOCUMENTS\STANDARD NOTICE.DOC

Appendix D

RCRA Part A Application



.	Obtaining or updating an EPA ID number for on-going regulated activities (Items 10-17 below) that will continue for a period of time.
<input type="checkbox"/>	Submitting as a component of the Hazardous Waste Report for _____ (Reporting Year)
<input type="checkbox"/>	Site was a TSD facility, a reverse distributor, and/or generator of $\geq 1,000$ kg of non-acute hazardous waste, > 1 kg of acute hazardous waste, or > 100 kg of acute hazardous waste spill cleanup in one or more months of the reporting year (or State equivalent LQG regulations)
<input type="checkbox"/>	Notifying that regulated activity is no longer occurring at this Site
<input type="checkbox"/>	Obtaining or updating an EPA ID number for conducting Electronic Manifest Broker activities
<input type="checkbox"/>	Submitting a new or revised Part A (permit) Form

[illegible]

--

Street Address		
City, Town, or Village		County
State	Country	Zip Code
Latitude	Longitude	<input type="checkbox"/> Use Lat/Long as Primary Address

Street Address		
City, Town, or Village		
State	Country	Zip Code

☐ Private ☐ County ☐ District ☐ Federal ☐ Tribal ☐ Municipal ☐ State ☐ Other

A. (Primary)	C.
B.	D.

8. Site Contact Information

☐ Same as Loca. on Address

First Name	MI	Last Name
Title		
Street Address		
City, Town, or Village		
State	Country	Zip Code
Email		
Phone	Ext	Fax

9. Legal Owner and Operator of the Site

A. Name of Site’s Legal Owner

☐ Same as Location Address

Full Name	Date Became Owner (mm/dd/yyyy)	
Owner Type <input type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other		
Street Address		
City, Town, or Village		
State	Country	Zip Code
Email		
Phone	Ext	Fax
Comments		

B. Name of Site’s Legal Operator

☐ Same as Location Address

Full Name	Date Became Operator (mm/dd/yyyy)	
Operator Type <input type="checkbox"/> Private <input type="checkbox"/> County <input type="checkbox"/> District <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Municipal <input type="checkbox"/> State <input type="checkbox"/> Other		
Street Address		
City, Town, or Village		
State	Country	Zip Code
Email		
Phone	Ext	Fax
Comments		

10. Type of Regulated Waste Activity (at your site)

Mark “Yes” or “No” for all current activities (as of the date submitting the form); complete any additional boxes as instructed.

A. Hazardous Waste Activities

<input type="checkbox"/> Y <input type="checkbox"/> N	1. Generator of Hazardous Waste—If “Yes”, mark only one of the following—a, b, c		
<input type="checkbox"/>	a. LQG	-Generates, in any calendar month, 1,000 kg/mo (2,200 lb/mo) or more of non-acute hazardous waste (includes quantities imported by importer site); or - Generates, in any calendar month, or accumulates at any time, more than 1 kg/mo (2.2 lb/mo) of acute hazardous waste; or - Generates, in any calendar month or accumulates at any time, more than 100 kg/mo (220 lb/mo) of acute hazardous spill cleanup material.	
<input type="checkbox"/>	b. SQG	100 to 1,000 kg/mo (220-2,200 lb/mo) of non-acute hazardous waste and no more than 1 kg (2.2 lb) of acute hazardous waste and no more than 100 kg (220 lb) of any acute hazardous spill cleanup material.	
<input type="checkbox"/>	c. VSQG	Less than or equal to 100 kg/mo (220 lb/mo) of non-acute hazardous waste.	
<input type="checkbox"/> Y <input type="checkbox"/> N	2. Short-Term Generator (generates from a short-term or one-time event and not from on-going processes). If “Yes”, provide an explanation in the Comments section. <i>Note: If “Yes”, you MUST indicate that you are a Generator of Hazardous Waste in Item 10.A.1 above.</i>		
<input type="checkbox"/> Y <input type="checkbox"/> N	3. Treater, Storer or Disposer of Hazardous Waste—Note: Part B of a hazardous waste permit is required for these activities.		
<input type="checkbox"/> Y <input type="checkbox"/> N	4. Receives Hazardous Waste from Off-site		
<input type="checkbox"/> Y <input type="checkbox"/> N	5 Recycler of Hazardous Waste		
<input type="checkbox"/>	a. Recycler who stores prior to recycling		
<input type="checkbox"/>	b. Recycler who does not store prior to recycling		
<input type="checkbox"/> Y <input type="checkbox"/> N	6. Exempt Boiler and/or Industrial Furnace—If “Yes”, mark all that apply.		
<input type="checkbox"/>	a. Small Quantity On-site Burner Exemption		
<input type="checkbox"/>	b. Smelting, Melting, and Refining Furnace Exemption		

B. Waste Codes for Federally Regulated Hazardous Wastes. Please list the waste codes of the Federal hazardous wastes handled at your site. List them in the order they are presented in the regulations (e.g. D001, D003, F007, U112). Use an additional page if more spaces are needed.

C. Waste Codes for State Regulated (non-Federal) Hazardous Wastes. Please list the waste codes of the State hazardous wastes handled at your site. List them in the order they are presented in the regulations. Use an additional page if more spaces are needed.

A. Other Waste Activities

<input type="checkbox"/> Y <input type="checkbox"/> N	1. Transporter of Hazardous Waste—If “Yes”, mark all that apply.	
<input type="checkbox"/>	a. Transporter	
<input type="checkbox"/>	b. Transfer Facility (at your site)	
<input type="checkbox"/> Y <input type="checkbox"/> N	2. Underground Injection Control	
<input type="checkbox"/> Y <input type="checkbox"/> N	3. United States Importer of Hazardous Waste	
<input type="checkbox"/> Y <input type="checkbox"/> N	4. Recognized Trader—If “Yes”, mark all that apply.	
<input type="checkbox"/>	a. Importer	
<input type="checkbox"/>	b. Exporter	
<input type="checkbox"/> Y <input type="checkbox"/> N	5. Importer/Exporter of Spent Lead-Acid Batteries (SLABs) under 40 CFR 266 Subpart G—If “Yes”, mark all that apply.	
<input type="checkbox"/>	a. Importer	
<input type="checkbox"/>	b. Exporter	

<input type="checkbox"/> Y	<input type="checkbox"/> N	1. Large Quantity Handler of Universal Waste (you accumulate 5,000 kg or more) - If "Yes" mark all that apply. Note: Refer to your State regulations to determine what is regulated.
	<input type="checkbox"/>	a. Batteries
	<input type="checkbox"/>	b. Pesticides
	<input type="checkbox"/>	c. Mercury containing equipment
	<input type="checkbox"/>	d. Lamps
	<input type="checkbox"/>	e. Aerosol Cans
	<input type="checkbox"/>	f. Other (specify) <u>Antifreeze (WI specific UW)</u>
	<input type="checkbox"/>	g. Other (specify) _____
<input type="checkbox"/> Y	<input type="checkbox"/> N	2. Destination Facility for Universal Waste Note: A hazardous waste permit may be required for this activity.

<input type="checkbox"/> Y <input type="checkbox"/> N	1. Used Oil Transporter—If “Yes”, mark all that apply.	
<input type="checkbox"/>	a. Transporter	
<input type="checkbox"/>	b. Transfer Facility (at your site)	
<input type="checkbox"/> Y <input type="checkbox"/> N	2. Used Oil Processor and/or Re-refiner—If “Yes”, mark all that apply.	
<input type="checkbox"/>	a. Processor	
<input type="checkbox"/>	b. Re-refiner	
<input type="checkbox"/> Y <input type="checkbox"/> N	3. Off-Specification Used Oil Burner	
<input type="checkbox"/> Y <input type="checkbox"/> N	4. Used Oil Fuel Marketer—If “Yes”, mark all that apply.	
<input type="checkbox"/>	a. Marketer Who Directs Shipment of Off-Specification Used Oil to Off-Specification Used Oil Burner	
<input type="checkbox"/>	b. Marketer Who First Claims the Used Oil Meets the Specifications	

D. Pharmaceutical Activities

<input type="checkbox"/> Y <input type="checkbox"/> N	1. Operating under 40 CFR Part 266, Subpart P for the management of hazardous waste pharmaceuticals—if “Yes”, mark only one. Note: See the item-by-item instructions for definitions of healthcare facility and reverse distributor.
<input type="checkbox"/>	a. Healthcare Facility
<input type="checkbox"/>	b. Reverse Distributor
<input type="checkbox"/> Y <input type="checkbox"/> N	2. Withdrawing from operating under 40 CFR Part 266, Subpart P for the management of hazardous waste pharmaceuticals. Note: You may only withdraw if you are a healthcare facility that is a VSQG for all of your hazardous waste, including hazardous waste pharmaceuticals.

12. Eligible Academic Entities with Laboratories—No. fication for opting into or withdrawing from managing laboratory hazardous wastes pursuant to 40 CFR Part 262, Subpart K.

<input type="checkbox"/> Y <input type="checkbox"/> N	A. Opting into or currently operating under 40 CFR Part 262, Subpart K for the management of hazardous wastes in laboratories— If “Yes”, mark all that apply. Note: See the item-by-item instructions for definitions of types of eligible academic entities.
<input type="checkbox"/>	1. College or University
<input type="checkbox"/>	2. Teaching Hospital that is owned by or has a formal written affiliation with a college or university
<input type="checkbox"/>	3. Non-profit Institute that is owned by or has a formal written affiliation with a college or university
<input type="checkbox"/> Y <input type="checkbox"/> N	B. Withdrawing from 40 CFR Part 262, Subpart K for the management of hazardous wastes in laboratories.

13. Episodic Generation

<input type="checkbox"/> Y <input type="checkbox"/> N	Are you an SQG or VSQG generating hazardous waste from a planned or unplanned episodic event, lasting no more than 60 days, that moves you to a higher generator category. If “Yes”, you must fill out the Addendum for Episodic Generator.
-------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

14. LQG Consolidation of VSQG Hazardous Waste

<input type="checkbox"/> Y <input type="checkbox"/> N	Are you an LQG notifying of consolidating VSQG Hazardous Waste Under the Control of the Same Person pursuant to 40 CFR 262.17(f)? If “Yes”, you must fill out the Addendum for LQG Consolidation of VSQG hazardous waste.
-------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

15. Notification of LQG Site Closure for a Central Accumulation Area (CAA) (optional) OR Entire Facility (required)

<input type="checkbox"/> Y <input type="checkbox"/> N	LQG Site Closure of a Central Accumulation Area (CAA) or Entire Facility.
A. <input type="checkbox"/> Central Accumulation Area (CAA) or <input type="checkbox"/> Entire Facility	
B. Expected closure date: _____ mm/dd/yyyy	
C. Requesting new closure date: _____ mm/dd/yyyy	
D. Date closed : _____ mm/dd/yyyy	
<input type="checkbox"/> 1. In compliance with the closure performance standards 40 CFR 262.17(a)(8) <input type="checkbox"/> 2. Not in compliance with the closure performance standards 40 CFR 262.17(a)(8)	

16. Notification of Hazardous Secondary Material (HSM) Activity

<input type="checkbox"/> Y <input checked="" type="checkbox"/> N	Are you notifying under 40 CFR 260.42 that you will begin managing, are managing, or will stop managing hazardous secondary material under 40 CFR 260.30, 40 CFR 261.4(a)(23), (24), (25), or (27)? If "Yes", you must fill out the Addendum to the Site Identification Form for Managing Hazardous Secondary Material.
------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

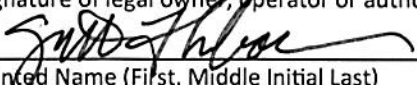
17. Electronic Manifest Broker

<input checked="" type="checkbox"/> Y <input type="checkbox"/> N	Are you notifying as a person, as defined in 40 CFR 260.10, electing to use the EPA electronic manifest system to obtain, complete, and transmit an electronic manifest under a contractual relationship with a hazardous waste generator?
------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

18. Comments (include item number for each comment)


Being submitted as part of the FPOR 10-yr license renewal process.
Facility is not proposing any changes to its operations.

19. Certification I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations. **Note: For the RCRA Hazardous Waste Part A permit Application, all owners and operators must sign (see 40 CFR 270.10(b) and 270.11).**

Signature of legal owner, operator or authorized representative 	Date (mm/dd/yyyy) 4/2/25
Printed Name (First, Middle Initial Last) Scott Thibodeau	Title General Manager
Email Scott.thibodeau@veolia.com	
Signature of legal owner, operator or authorized representative	Date (mm/dd/yyyy)
Printed Name (First, Middle Initial Last)	Title
Email	

EPA ID Number

United States Environmental Protection Agency
HAZARDOUS WASTE PERMIT PART A FORM



1. Facility Permit Contact

First Name	MI	Last Name
Title		
Email		
Phone	Ext	Fax

2. Facility Permit Contact Mailing Address

Street Address		
City, Town, or Village		
State	Country	Zip Code

3. Facility Existence Date (mm/dd/yyyy)

4. Other Environmental Permits

A. Permit Type	B. Permit Number														C. Description

5. Nature of Business

6. Process Codes and Design Capacities

[illegible]

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

[illegible]

8. Map Included as Drawing D-2 and Drawing D-3

Attach to this application a topographical map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all spring, rivers, and other surface water bodies in this map area. See instructions for precise requirements.

9. Facility Drawing

All existing facilities must include a scale drawing of the facility. See instructions for more detail.

10. Photographs Included as Appendix T

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, and disposal areas; and sites of future storage, treatment, or disposal areas. See instructions for more detail.

11. Comments

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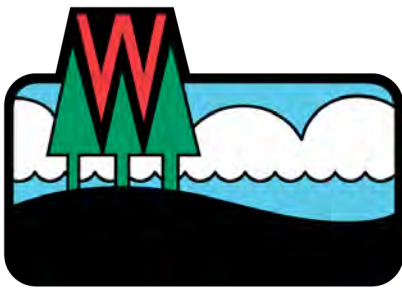
Appendix E

Other Regulatory Licenses and Permits

Hazardous Waste Storage - Container License

Hazardous Waste Treatment - License

Solid Waste Processing - Soil Remediation as Part of Landfill Operations



**STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES**

**HAZARDOUS WASTE FACILITY LICENSE
Hazardous Waste Storage - Container**

License Number: 6008

Licensee Name: VEOLIA ES TECHNICAL SOLUTIONS LLC

Effective Date: October 01, 2024

Expiration Date: September 30, 2025

Facility Information

FID: 246076050

EPA ID: WID988566543

VEOLIA ES TECHNICAL SOLUTIONS LLC

1275 Mineral Springs Dr

Port Washington WI 53074-2163

Ozaukee County (46)

DNR Region: Southeast Region

This license authorizes the licensee to operate the hazardous waste facility described above during the term hereof except as modified by the Department. This license is subject to and conditioned upon compliance with chapter 291, Wis. Stats., and chapters NR 660-679, Wis. Adm. Code (hazardous waste), any plan approval and modifications thereof, and any special order and modifications thereof issued by the Department. Any exemptions from the requirements of chapters NR 660-679, Wis. Adm. Code, issued for the facility are listed above and on attached documents.



**STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES**

**HAZARDOUS WASTE FACILITY LICENSE
Hazardous Waste Treatment - Miscellaneous**

License Number: 4585

Licensee Name: VEOLIA ES TECHNICAL SOLUTIONS LLC

Effective Date: October 01, 2024

Expiration Date: September 30, 2025

Facility Information

FID: 246076050

EPA ID: WID988566543

VEOLIA ES TECHNICAL SOLUTIONS LLC

1275 Mineral Springs Dr

Port Washington WI 53074-2163

Ozaukee County (46)

DNR Region: Southeast Region

This license authorizes the licensee to operate the hazardous waste facility described above during the term hereof except as modified by the Department. This license is subject to and conditioned upon compliance with chapter 291, Wis. Stats., and chapters NR 660-679, Wis. Adm. Code (hazardous waste), any plan approval and modifications thereof, and any special order and modifications thereof issued by the Department. Any exemptions from the requirements of chapters NR 660-679, Wis. Adm. Code, issued for the facility are listed above and on attached documents.



**STATE OF WISCONSIN
DEPARTMENT OF NATURAL RESOURCES**

SOLID WASTE FACILITY OPERATION LICENSE

**Solid Waste Processing - Soil Remediation as Part of Landfill
Operation**

License Number: 3870

Licensee Name: VEOLIA ES TECHNICAL SOLUTIONS LLC

Effective Date: October 01, 2024

Expiration Date: September 30, 2025

Facility Information

FID: 246076050

EPA ID: WID988566543

VEOLIA ES TECHNICAL SOLUTIONS LLC

1275 Mineral Springs Dr

Port Washington WI 53074-2163

Ozaukee County (46)

DNR Region: Southeast Region

This license authorizes the licensee to operate the solid waste facility described above during the term hereof except as modified by the Department. This license is subject to and conditioned upon compliance with the provisions of chapter 289, Wis. Stats., and chapters NR 500-590, Wis. Adm. Code, any plan approval and modifications thereof, and any special order and modifications thereof issued by the Department. Any exemptions from the requirements of chapters NR 500-590, Wis. Adm. Code, issued for the facility are listed above.

Appendix F

Legal Descriptions

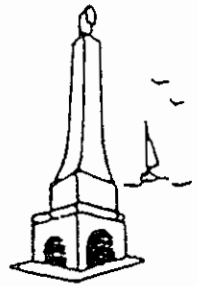
city of

Port Washington

100 W. Grand Avenue
Port Washington, WI 53074

Administrative Office
Public Works

(414) 284-5585
(414) 284-2600



February 25, 1987

Mr. David Opitz
Aqua Tech
140 S. Park Street
Port Washington, WI 53074

RE: Proposed property acquisition
Port Washington Industrial Park

Dear Dave:

Review of the enclosed FEMA flood plain maps indicates that the following described property is not located within the designated floodplain.

Legal Description
Opitz Offer To Purchase

That part of the SE $\frac{1}{4}$ Of Section 32, T 11 N, R 22 E, City of Port Washington, Ozaukee County, Wisconsin, described as follows:

Commencing at the East $\frac{1}{4}$ corner of Section 32, thence West, 1890.80 feet, thence S 00° 16' 50" E, 792.05 feet to the point of beginning, thence continuing S 00° 16' 50" E, 1132.44 feet, thence S 89° 47' 49" W, 440.00 feet, thence N 00° 16' 50" W, 1134.00 feet, thence East 440.00 feet to the point of beginning, containing 11.45 acres.

Sincerely,

A handwritten signature in cursive script that reads "Robert R. Dreblow".

Robert R. Dreblow, P.E.
Director of Public Works

RRD/bjb

Enclosure

Appendix G
Not Needed for 2025 FPOR Renewal
(Climatology Data)

Appendix H
Not Needed for 2025 FPOR Renewal
(Emergency Egress Gate)

Appendix I
WDNR July 3, 2003, RCRA Facility Assessment Report

RCRA FACILITY ASSESSMENT

ONYX SPECIAL SERVICES, INC.

Port Washington, Wisconsin
EPA ID #WID 988566543
FID #246076050

July 3, 2003



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July 03, 2003

RCRA FACILITY ASSESSMENT
ONYX SPECIAL SERVICES, INC.
Port Washington, Wisconsin
EPA ID #WID 988566543
FID #246076050

INTRODUCTION

As part of the Resource Conservation and Recovery Act (RCRA), the U.S. Environmental Protection Agency (USEPA) or the State of Wisconsin Department of Natural Resources (WDNR) is required to conduct a RCRA Facility Assessment (RFA) at facilities requesting to obtain a RCRA operating permit. The Goal of the RCRA Corrective Action process is to identify and correct any releases to the environment at facilities which manage hazardous waste. An RFA is the first step in the overall corrective action process, and is intended to identify known or potential releases to the environment, and to recommend whether additional investigations are necessary. The Onyx Special Services, Inc. (Onyx) Port Washington facility is up for license renewal and expansion. Therefore, this RFA for Onyx Special Services, Inc. (Onyx) examines the waste streams at the plant, identifies Solid Waste Management Units (SWMU's), documents releases which have occurred at the facility, identifies Areas of Concern (AOC's), evaluates all relevant data, and makes recommendations for future actions. This RFA was written in accordance with the US EPA RFA guidance and WDNR Waste Management Program Corrective Action Guidance.

The original hazardous waste facility was constructed by Aqua Tech in 1989. The only non-agricultural use of the property previous to that was as a lawnmower test area for the neighboring Bolens/Garden Way lawn tractor factory. The original hazardous waste storage and treatment license was issued in January of 1990, when Onyx began operating.

WDNR Staff conducted an inspection of the facility on April 25, 2002 to evaluate the site for corrective action issues. No samples were taken. Some spills have occurred at the facility. Based on this inspection, and information contained in WDNR files, WDNR has sufficient information to determine that Onyx Special Services, Inc. should now be required to conduct some limited sampling.

FACILITY OVERVIEW

Location, Land Use and Environmental Setting

Location

Onyx Special Services, Inc. is located in an industrial park on the outskirts of the City of Port Washington on an approximately eleven-acre site. The site is in Ozaukee County in the NW ¼ of the SE ¼ of Section 32, Township 11 North, Range 22 East. The street location and mailing address is 1275 Mineral Springs Drive, Port Washington, WI, 53074. Onyx Special Services, Inc.

is about 1500 feet south of West Sunset Road, and about 1800 feet east of Highway 32, South Spring Street.

Surrounding Land Use

Onyx Special Services, Inc. is located in a rural industrial park setting bounded on the north and east by industrial properties. Land to the west and south is agricultural, undeveloped, or under development. The site is zoned industrial.

Surface Water

A pond lies immediately north of the facility within a short distance from the paved area of the facility. The roof drains and paved parking area drain through separate storm sewers to this pond. Two north-south running intermittent creeks that eventually drain into Lake Michigan at the Port Washington power plant lie about 500 feet east and west of the site.

Geology/Hydrogeology

Three aquifers, the deep sandstone, the dolomite, and the saturated part of the unconsolidated glacial deposits underlie the site. Ground water flow in the dolomite and sandstone aquifers is generally thought to be east, towards Lake Michigan. The near-surface groundwater flow at the site may be towards the pond.

Nearby private water supply wells on Lakeshore Road document about 160 feet of clay soil over bedrock. Well logs taken at the neighboring Bolens Corporation, 1,000 feet northeast, note a stiff brown silty clay to the bottom of the borings at about 20 feet. Several of the boring logs note a sand seam at nine to eleven feet, where the groundwater table occurs.

The industrial park is served by municipal water. The nearest water supply wells are located about 1,900 feet east and 1,800 feet northeast of the site.

FACILITY MANUFACTURING PROCESSES AND WASTE MANAGEMENT OPERATIONS

Hazardous Waste Storage

Onyx's current main operations are hazardous waste storage and, starting in 1993, operating a lamp crusher and retort furnace for recovering mercury from fluorescent light tubes. Onyx stores and consolidates hazardous waste from generators in Wisconsin, Minnesota, Illinois, Indiana, Michigan, Ohio, and Indiana. This waste is then shipped to off-site treatment or disposal facilities when enough accumulates for economical shipment. Onyx Special Services, Inc., is one of only a few facilities in Southeast Wisconsin that can accept a wide range of hazardous waste for storage. Onyx can accept the following:

mercury-contaminated debris
mercury-containing solutions
spent solvents and solvent mixtures
spent organic acids
cyanide and sulfide bearing wastes

mercury containing lamps and phosphor powder
mercury compounds
used oil
spent alkaline solutions and solids
halogenated mixtures

flammable and combustible wastes water reactive wastes
poison/toxic wastes oxidizers
certain pesticides and herbicides.

Onyx does not accept radioactive materials, explosive materials, pyrophoric materials or infectious materials. The current hazardous waste container storage area consists of three storage rooms divided into pods. The combined storage area of the rooms is 2,430 square-feet.

Mercury Reclamation

Mercury containing wastes such as batteries, lamps, and mercury contaminated debris are treated at Onyx to reclaim the mercury. Fluorescent lamps are crushed, the glass and aluminum end caps are collected, and the phosphor powder is captured in drums. The powder and other mercury contaminated waste is retorted at Onyx to reclaim the mercury. Reclaiming mercury by retorting waste is considered a hazardous waste recycling activity and is exempt from hazardous waste licensing requirements. Onyx has provided a one-time notice to the US EPA stating the retorting operation is exempt from the Boiler and Industrial Furnace rules stated in Subpart H of 40 CFR Part 266. A WDNR air discharge-permit covers emissions from the retort furnace and lamp recycling machines. Emissions from the roof stacks are scrubbed with a filter device and activated carbon.

Onyx operates a ten-day transfer facility to facilitate economical shipment of waste by temporarily storing hazardous waste during transport on semi-trailers in their secured parking lot. Onyx also operates a TSCA storage facility by temporarily storing TSCA regulated PCB materials, such as fluorescent light tube ballasts, on semi-trailers in their secured parking lot.

Solid Waste Solidification

Onyx operates a small-scale non-hazardous solid waste solidification operation. Although Onyx still maintains a reduced capacity for this operation, it was mainly active from 1993 to 2001.

HAZARDOUS WASTE REGULATORY HISTORY

July 22, 1987	Aqua-Tech, Inc. notifies the Department that they are proposing to construct a small hazardous waste storage facility.
October 9, 1987	Date of a Part A application submitted by Aqua-Tech, Inc. for the storage of containers in a small storage facility.
October 12, 1987	Aqua-Tech submits a Feasibility and Plan of Operation (FPOR) for a small hazardous waste storage facility at 1275 South Port Drive in Port Washington.
October 22, 1987	Aqua-Tech submits a copy of the written agreement between the local siting committee and Aqua-Tech, Inc. relating to their proposed small hazardous waste storage facility.
December 10, 1987	The Department issues a notice of incompleteness for the small storage facility FPOR.
January 11, 1988	Aqua-Tech, Inc. responds to the Department's December 10, 1987 notice of incompleteness.
March 9, 1988	The Department issues a second notice of incompleteness for the FPOR.

April 12, 1988	Aqua-Tech, Inc. responds to the Department's March 9, 1988 notice of incompleteness.
June 30, 1988	The Department issues a public notice stating that Aqua-Tech has filed a complete FPOR. The Department also intends to issue a preliminary determination to conditionally approve the report.
August 14, 1988	Close of the public comment period. No comments were received.
August 22, 1988	Aqua-Tech, Inc. submits a modification request for the FPOR. The modification request includes: the City of Port Washington renaming South Port Drive to Mineral Springs Drive; changing the fire suppression system for the storage rooms from a water sprinkler system to a Halon 1301 system; modifying the construction of the berms from 4" high concrete berms to 6" wide and 2 feet high impervious concrete walls; modifying the construction of the building to incorporate an enclosed segregated transfer facility; information on the storage of dioxin derived wastes as stipulated in a Part A application revised on January 11, 1988; and, the repackaging of labpacks into larger sized containers.
September 6, 1988	Aqua-Tech, Inc. submits an updated Notification of Hazardous Waste. Activity form in order to obtain an EPA ID number. Aqua-Tech intends to generate hazardous waste, operate as a transporter and transfer facility and as a storage facility at 1275 Mineral Springs Drive in Port Washington.
September 27, 1988	The Department sends a letter to Aqua-Tech requesting clarification and changes to the August 22, 1988 modification.
October 7, 1988	Aqua-Tech submits a response to the Department's September 27, 1988 letter.
October 17, 1988	The Department issues a second draft FPOR determination to Aqua-Tech due to significant changes from the first draft.
October 19, 1988	Aqua-Tech provides comments on the second draft by telephone.
October 25, 1988	The Department issues Onyx a FPOR approval for a small storage facility.
May 1, 1989	The Department mails a copy of a certification form used to satisfy corrective action requirements under the Hazardous and Solid Waste Amendments (HSWA) of 1984. The Department recommends that Aqua-Tech fill out the form even though this is a new facility and include information regarding the previous land usage. The information is necessary for US EPA to complete their HSWA permit for the facility.
May 9, 1989	Aqua-Tech submits the completed HSWA certification form. Aqua-Tech certifies that there are no solid waste management units at the facility and that the property was previously used by a lawn mower manufacturer as a testing ground. Prior to that, the property was used as farmland.
May 31, 1989	The Department prepares a RCRA Facility Assessment and recommends that Aqua-Tech, Inc. is not environmentally significant. No further action is recommended.
June 6, 1989	The Department sends a license application form to Aqua-Tech, Inc.
August 24, 1989	Aqua-Tech submits the license application form. Aqua-Tech indicates that documentation of adequate liability insurance and a Letter of Credit for closure will be submitted as it becomes available. Aqua-Tech also submits an updated FPOR. The updated FPOR includes minor changes to the contingency plan, an updated closure cost estimate and the

	replacement of aluminum grating with steel grating for the spill containment system.
September 6, 1989	Aqua-Tech submits an operating license application form since the operating license is due to expire on September 30, 1989. A copy of a certification of liability insurance is included.
September 28, 1989	The Department public notices their intent to issue a hazardous waste operating license to Aqua-Tech jointly with the EPA. A radio announcement is also made.
November 28, 1989	Aqua-Tech submits construction documentation for the small storage facility.
December 6, 1989	The Department conducts a pre-licensing and site construction inspection of the new Aqua-Tech facility.
December 11, 1989	Aqua-Tech submits a copy of a Letter of Credit for closure financial responsibility. The Letter of Credit is effective on January 1, 1990.
December 12, 1989	The Department issues a Site Construction Report Plan Approval.
December 22, 1989	Aqua-Tech requests a modification to eliminate specific condition #6 prohibiting the movement of waste from the small storage facility to the transfer facility.
December 27, 1989	The Department issues a hazardous waste storage license to Aqua-Tech for a maximum capacity of 10,000 gallons.
March 13, 1990	The Department conducts a hazardous waste inspection. The facility is found to be in compliance.
May 1, 1990	The Department issues a modification eliminating condition #6 from the October 25, 1988 FPOR approval.
September 5, 1990	The Department conducts a hazardous waste inspection. A notice of noncompliance is issued on September 17, 1990 for contingency plan and aisle space requirements. Aqua-Tech submits information regarding actions taken to correct the areas of noncompliance on October 16, 1990 and December 6, 1990.
January 30, 1991	Aqua-Tech, Inc. states their intention to modify their approval to bulk chemically compatible wastes into 55-gallon containers and expand their storage operations to 20,000 gallons.
February 6, 1991	The Department issues a letter to Aqua-Tech informing them that their proposed bulking operations is not considered a minor modification of their license.
March 21, 1991	The Department conducts a hazardous waste inspection. A notice of noncompliance is issued on April 2, 1991 for container standards, aisle space and inspection requirements. Aqua-Tech submits information regarding actions taken to correct the areas of noncompliance on April 21, 1991 and June 27, 1991.
July 1991	Onyx submits a revised FPOR for a hazardous waste storage facility.
August 15, 1991	Mineral Springs Corporation notifies the Department that they intend to purchase the storage and transfer facility operated by Aqua-Tech.
May 1, 1991	The Department receives copies of a revised FPOR for a proposed expansion of the Aqua-Tech storage facility from 10,000 gallons to 20,000 gallons.
June 27, 1991	The Department issues a Notice of Incompleteness for the FPOR.
August 27, 1991	Aqua-Tech submits a response to the June 27, 1991 Notice of Incompleteness.
September 23, 1991	The Department issues a minor modification to transfer ownership from Aqua-Tech, Inc. to Mineral Springs Corporation.

September 26, 1991	The Department conducts a hazardous waste inspection. A notice of noncompliance is issued on October 15, 1991 for storing waste for more than one year, shipping waste to a non-approved TSD, and not keeping an inspection schedule. Mineral Springs Corporation submits information regarding actions taken to correct the areas of noncompliance on October 25, 1991 and March 27, 1992.
October 31, 1991	The Department issues a second Notice of Incompleteness for the FPOR.
December 12, 1991	Mineral Springs Corporation submits a response to the October 31, 1991 Notice of Incompleteness.
March 25, 1992	The Department finds the FPOR to be complete. The determination is conditional, provided additional information is submitted within 30 days.
March 26, 1992	The Department issues a public notice for filing a complete FPOR and preliminary environmental impact decision.
March 30, 1992	The Department conducts a hazardous waste inspection. A notice of noncompliance is issued on May 14, 1992 to Mineral Springs Corporation for storing waste for longer than one year and not complying with manifest requirements. Mineral Springs submits information regarding the actions taken to correct the areas of noncompliance on April 3, 1992 and May 28, 1992.
April 15, 1992	Mineral Springs Corporation submits the additional information as required by a condition in the March 25, 1992 completeness determination
May 21, 1992	Mineral Springs Corporation submits a license application.
May 27, 1992	The Department issues a FPOR approval for the expansion of the licensed storage capacity from 10,000 gallons to 20,000 gallons.
May 28, 1992	The Department issues a public notice and radio announcement of their intent to issue a hazardous waste storage license to Mineral Springs Corporation. The environmental analysis and decision on the need for an environmental impact statement is also made.
July 1, 1992	Mineral Springs Corporation states their intention to compact hazardous wastes using a drum crusher.
July 21, 1992	The Department issues a license allowing 20,000-gallon container storage at the Mineral Springs Corporation.
September 29, 1992	The Department conducts a hazardous waste inspection. A notice of noncompliance is issued on October 23, 1992 for an incorrectly identified waste type. The facility submits information regarding the actions taken to correct the area of noncompliance on February 24, 1993.
December 1, 1992	The Department concludes that the recontainerization of hazardous waste and the bulking of waste oil do not require a plan modification. The Department clarifies that the activities should be done in compliance with condition 18 and 19 of the FPOR approval dated May 27, 1992.
March 30, 1993	The Department conducts a hazardous waste inspection. A notice of noncompliance is issued on May 11, 1993 for waste analysis violations, not complying with a plan approval condition and deficiencies in the closure plan. The facility submits information regarding the actions taken to correct the areas of noncompliance on September 22, 1993.
April 27, 1993	The Department is notified that the ownership of the Mineral Springs facility will transfer to the Superior Special Services Hazardous Waste Group, Inc. (Superior) on April 26, 1993.
September 22, 1993	The Department conducts a hazardous waste inspection. Superior is in compliance at the time of the inspection.

September 30, 1993	The Department issues a minor modification approval to transfer ownership from Mineral Springs Corporation to Superior Special Services.
February 18, 1994	The Department conducts a hazardous waste inspection. A notice of noncompliance is issued on April 11, 1994 because a subsequent notification was not submitted for the name change. The facility submitted information regarding the actions taken to correct the area of noncompliance on March 24, 1994.
March 2, 1994	The Department issues a notice of violation alleging that Superior did not comply with the conditions of their approval. The violations regarded accepting picric acid, a shock sensitive explosive, into the storage facility on or about January 14, 1993.
March 28, 1994	Superior Special Services submits a letter asking for clarification on the regulation of phosphor powder generated by lamp crushing operations.
March 31, 1994	Superior submits information in response to the March 2, 1994 notice of violation stating that the picric acid in question was hydrated and may not have been a shock sensitive explosive.
April 14, 1994	The Department issues a letter to Superior stating that mercury phosphor powder exceeding the TCLP limit is subject to hazardous waste regulation and is not exempted as a scrap metal or precious metal.
June 7, 1994	The Department conducts a hazardous waste inspection. A notice of noncompliance is issued on August 5, 1994 for employee training requirements. Information regarding the actions taken to correct the area of noncompliance is submitted on September 28, 1995.
December 2, 1994	Superior submits a proposed plan of operation for the mercury retort operation.
March 3, 1995	The Department determines that the mercury retort operation qualifies for the legitimate recovery and reclamation recycling exemption in NR 625.06, Wis. Admin. Code.
March 10, 1995	The Department conducts a hazardous waste inspection. The notice of noncompliance was not received by Superior and was reissued on May 30, 1996, for waste analysis requirements, recordkeeping requirements and marking containers. Superior submits information regarding the actions taken to correct the areas of noncompliance on May 30, 1996 and June 30, 1996.
June 26, 1995	The Department is notified that Superior Hazardous Waste Group, Inc. will be changing its name to Superior Special Services, Inc. effective July 1, 1995.
September 28, 1995	The Department conducts a hazardous waste inspection. The facility is in compliance at the time of the inspection.
December 7, 1995	Superior requests a Class 2 modification to add newly listed waste codes. The waste codes were published as a final rule in the February 9, 1995 Federal Register and include certain K, U, and P listed wastes. Superior also requests the Department to make a determination on whether the hazardous waste license needs to be modified to operate an used oil transfer facility in the licensed hazardous waste storage area.
January 3, 1996	Superior submits a letter to the Department requesting the ability to store mercury wastes, such as mercury batteries and mercury-containing thermostats in DOT approved shipping containers, placed in a semi-trailer, until retorting can occur. Superior proposes to store the semi-trailer in their parking lot.

March 7, 1996	The Department determines that a plan modification is not necessary to operate a used oil transfer facility in the hazardous waste storage facility.
March 21, 1996	The Department conducts a hazardous waste inspection. A notice of noncompliance is issued on April 3, 1996 for waste being stored for more than one year and security requirements. The facility submits information regarding the actions taken to correct the areas of noncompliance on July 30, 1996.
July 25, 1996	Superior provides written documents regarding an expansion that was constructed to perform solidification of nonhazardous waste. The expansion includes new loading docks and a new office area. The submittal includes a request to receive hazardous waste at the north dock.
September 4, 1996	The Department conducts a hazardous waste inspection. A notice of noncompliance is issued on September 26, 1996 for incomplete inspection records, incomplete employee training records, not maintaining aisle space and not meeting a condition of their approval. Superior submits information regarding the actions taken to correct the areas of noncompliance on October 24, 1996.
November 14, 1996	The Department notifies Superior that accepting waste at the north dock would be considered a class 1 modification.
November 15, 1996	The Department notifies Superior that mercury wastes brought to the facility for retorting can only be stored in licensed storage areas.
January 24, 1997	The Department issues a Class 2 plan modification approval to add newly listed waste codes published as a final rule in the February 9, 1995 federal register.
March 19, 1997	The Department conducts a hazardous waste inspection. Superior is in compliance at the time of the inspection.
August 25, 1997	The Department issues a close-out letter for the notice of violation issued on March 2, 1994.
September 16, 1997	The Department and US EPA conduct a hazardous waste inspection. The facility is in compliance at the time of the inspection.
January 30, 1998	The Department and US EPA conduct a hazardous waste inspection. Superior is in compliance at the time of the inspection.
June 10, 1998	The Department conducts a hazardous waste inspection. A notice of noncompliance is issued on July 20, 1998 for inadequate employee training requirements. Superior submits information regarding the actions taken to correct the area of noncompliance on July 12, 1998.
June 18, 1998	The Department issues a Class 1 plan modification approval to add new wastes that are encountered at household collection sites or are similar to other chemicals that are already accepted. These wastes included U and P listed wastes.
November 13, 1998	The Department issues a call-in letter requesting Superior to submit a revised FPOR by May 11, 1999. The 10-year license expires on December 27, 1999.
December 10, 1998	The Department conducts a hazardous waste inspection. A notice of noncompliance is issued on January 5, 1999 for incomplete inspection logs, inadequate employee training and inconsistent markings on a drum. Superior submits information regarding the actions taken to correct the areas of noncompliance on January 29, 1999.
May 27, 1999	Montgomery Watson, on behalf of Superior Special Services, submits copies of a revised FPOR in response to the Department's call-in letter

	dated November 13, 1998. The submittal proposes an expansion of the hazardous waste storage areas at the facility.
June 10, 1999	The Department conducts a hazardous waste inspection. A notice of noncompliance is issued on August 3 1999 for inadequate emergency procedures. Superior submits information regarding the actions taken to correct the area of noncompliance on August 19, 1999.
December 17, 1999	The Department conducts a hazardous waste inspection. The facility is in compliance at the time of the inspection.
January 6, 2000	A public notice is published for Superior's intent to re-license an expanded facility.
June 15, 2000	The Department conducts a hazardous waste inspection. The facility is in compliance at the time of the inspection.
December 12, 2000	The US EPA and the Department conduct a hazardous waste inspection. EPA issues a notice of violation dated March 12, 2001 for failure to comply with manifest requirements, file a manifest exception report, complete weekly inspections and transporter record keeping and operating requirements. Superior submitted information regarding actions taken to correct the violations on December 15, 2000 and March 29, 2001.
May 17, 2001	The Department issues a notice of incompleteness for the May 27, 1999 FPOR. The notice requests a response from Superior within 60 days.
May 24, 2001	The Department conducts a hazardous waste inspection. A notice of noncompliance and close-out letter is issued on August 2, 2001 for failure to close containers of hazardous waste while they are in storage. Superior corrected the violation during the inspection.
June 25, 2001	Superior requests an extension for submitting their response to the May 17, 2001 notice of incompleteness. The request is made because Superior had not yet received US EPA's comments on their submittal. Superior requests that the submittal date be extended to 45 days after receiving EPA's comments.
July 18, 2001	The Department grants Superior a 45-day extension to September 2, 2001.
August 17, 2001	EPA issues a Notice of Deficiency to Superior.
September 10, 2001	Superior submits a response to the Department's Notice of Incompleteness.
November 16, 2001	Superior submits two letters requesting a determination on the regulatory status of a proposed batch recovery system for mercury-bearing compounds and solutions and proposed shredding and crushing operations.
December 6, 2001	The Department conducts a hazardous waste inspection. A notice of noncompliance is issued on December 26, 2001 for failure to meet security requirements and failure to maintain adequate operating records for the mercury retort unit. Superior submits documentation stating the actions taken to correct the violations on January 18, 2002.
January 15, 2002	The Department e-mails a second notice of incompleteness to Superior. A response is requested within 30 days.
February 14, 2002	Superior submits a response to the US EPA notice of deficiency dated August 17, 2001.
March 25, 2002	The Department issues a second notice of incompleteness letter to Superior. The information requested in the letter is similar to the information requested in the January 15, 2002 e-mail.
April 25, 2002	Department personnel conduct a corrective action evaluation inspection.

May 14, 2002	Superior submits a response to the Department's March 25, 2002 notice of incompleteness.
May 21, 2002	The Department conducts a hazardous waste inspection. A notice of noncompliance and close-out letter is issued on May 23, 2001 for failure to keep containers closed during storage. Superior corrected the violation during the inspection.
December 26, 2002	The Department provided conditional approval of Onyx's Class 1 Plan Modification request, dated December 17, 2002, to change the facilities name from Superior Special Services, Inc. to Onyx Special Services, Inc.

This is not a complete list of contacts between Onyx and WDNR.

DOCUMENTED RELEASES

Chronological List of Spills from DNR File

The following list is from spills incident reports contained in the spills file at the Department of Natural Resources Plymouth Service Center for this facility.

January 1992	10 gallons expended lithography plate etching solution, drained into the loading dock collection sump; 10-15 gallons of corrosive liquid (contains ferric nitrate and nitric acid).
February 1992	190 pounds of Halon 1301 gas that dissipated into the atmosphere.
Sept 1992	1-2 gallons of acid buffer solution in parking lot. Collected with oil-dry, leaking container was overpacked.
October 1992	20 gallons ferric nitrate, a corrosive liquid, spilled when its canister burst, leaking contents into storage cell. The pressure release triggered the fire suppression system, releasing 475 pounds of Halon 1301.
August 1993	1/2-pint sulfuric acid tank rinse and 1/2-pint sodium hydroxide stripper sludge spilled in front of the loading dock. Spill was collected and properly disposed.
December 1993	Less than 10 gallons sulphuric or phosphoric/fluoroboric acid solution spilled in the parking lot from a transportation trailer. The spilled substance was collected with oil-dry and sodium bicarbonate and properly disposed of.
August 1994	2-gallons sec-butyl alcohol spilled from a bad seam in a drum onto the parking lot. The spilled substance was collected with oil-dry and properly disposed of.
December 1994	Less than 10-gallons petroleum solvent onto snow on the paved parking lot. Spilled substance was collected with floor dry and drummed with contaminated snow.
July 1995	About 25 pounds bulked waste flammable liquid paint and solvents spilled when a coupling broke on a transfer line from drums to a transportation truck in the

parking lot. The spilled substance was collected with oil dry and properly disposed of.

- October 1996 3,000 gallons latex top-coat solution (for thermal fax paper) spilled from a tanker in the north loading dock. The material drained to the loading dock sump, then through the drainage pipe connected to the sump onto the ground surface drainage area in the northwest section of the fenced area. The solution was contained with a trench dug in the soil with a backhoe before it could reach the pond. 90% of material was recovered. About 48 cubic-yards of contaminated soil and sod was excavated for remedial action to a depth of 4-5 inches. Soil samples were collected from the drainage pipe. These confirmation samples indicated no detectable concentrations of acetone and styrene.
- March 1997 2-gallons of mercury contaminated ice-water was spilled onto paved parking lot. The spill was collected with oil-dry and a commercial absorbent and properly disposed of.
- July 1997 Approximately 25 gallons mineral spirits spilled in the loading dock. The material was characteristic hazardous for ignitability and toxicity for lead and chromium. A vacuum hose split while Onyx personnel were pumping liquids into a tanker truck, causing this spill. The spill material flowed downhill where it was collected with a berm of oil-dry. The material was containerized and properly disposed of.
- December 1997 1,000-3,000 gallons of RCRA non-hazardous fly ash spilled from the flyash storage silo release valve. The flyash covered the surface of the ground from the silo to near the east property line and the employee part of the parking lot. The flyash was recovered with a Super Sucker Vacuum truck and a street sweeper.

Onyx's List of Spills

Onyx included a table of known releases at the facility as Appendix M to their Feasibility and Plan of Operations Report, dated May of 1999. Most significantly, Onyx lists a mercury vapor release of less than one pound in March of 1997 from the retort oven in the retort room, and a release of 20 pounds of mercury in August of 1999 into a trailer and on the south parking lot.

SOLID WASTE MANAGEMENT UNITS (SWMU's)

List of SWMU's

- 1 Hazardous Waste Storage Rooms
- 2 South Loading Dock
- 3 North Loading Dock
- 4 Fluorescent Lamp Crushing/Processing Machine
- 5 Mercury Retort Area
- 6 Waste Glass Lugger Box Areas
- 7 Solid Waste Solidification Area
- 8 Household Hazardous Waste Storage Area

9 Trailer Storage/Parking Lot Area

SWMU #1 Hazardous Waste Storage Rooms

Location

Main Building

Unit Description

The storage rooms consist of three separate rooms enclosed by 4-hour fire prevention concrete walls and ceiling, and with high pressure, monolithic concrete floors. Capacity is about 20,000 gallons. The rooms are divided into "pods" separated by short concrete walls and 3 ½-inch high berms. Storage containers are kept a few inches off the floor on steel gratings to keep the containers from having contact with liquid in the event of a spill. Storage Room 1 is approximately 660 square feet, including a segregated 68 square foot enclosed subroom. Storage Room 1 is divided into two segregated pods by concrete walls and concrete berms. Storage Room 2 is approximately 1130 square feet and is divided into three bermed pods of 394, 400, and 336 square feet. Storage Room 3 is approximately 640 square feet and is divided into six pods of 98, 95, 98, 117, 114, and 118 square feet. Containers stored in these rooms range in size from less than one-pint bottles up to cubic yard boxes. Hazardous wastes are only received in DOT shippable containers.

History of Use and Operation

These rooms were built as an original part of the facility when Aqua Tech, Inc. built it in 1989. The use of the rooms has not changed. Hazardous wastes are stored in these rooms in containers that range in size from pint up to cubic-yard DOT approved boxes on pallets. 55-gallon drums are typical in these rooms.

Potential Migration Pathway/Release Controls

Floors of the pods are constructed of 4,000 psi concrete mixed with fly-ash and polypropylene fibers. The concrete floors in the pods were a monolithic, continuous pour, which was wet-cure sealed with a superplasticizer. The floors have not been top-coated.

A portable peristaltic pump is maintained at the facility to collect spilled hazardous waste. The floor grating is removable in sections to allow for pumping of the spill. The spaces below the gratings are vacuumed annually. Each pod has a raised walkway and enough aisle space for the use of fire protection, spill control, and decontamination equipment. Drums are stored in rows to allow for accessibility. Wastes are stored in a segregated manner by hazard class to prevent incompatible mixing in the event of a spill.

History of Releases

On October 29, 1992, a twenty-gallon ferric nitrate corrosive liquid canister burst, leaking contents into one of the storage pods. The pressure release triggered the fire suppression system, releasing 475 pounds of Halon 1301. The Department of Natural Resources noted in a "Substance Spill/Release Form" that the spill was contained and no DNR action was taken. Onyx lists the occurrence of half-dozen minor spills in the storage pods.

Conclusions/Remarks

The hazardous waste storage rooms have a very low potential for having caused environmental contamination.

SWMU #2 South Loading Dock

Location

The South Loading Dock is located on the south end of the building.

Unit Description

Incoming and outgoing wastes pass through this loading dock. Liquid waste containers are moved from the storage pods to the loading dock before bulking into tanker trucks. The loading dock area is designed to contain a spill. The floor is a continuous concrete slab that slopes inward toward the building to a trench drain that empties into a sealed trench.

Potential Migration Pathway/Release Controls

The trench-drain is sealed to contain spills to the loading dock area until a vacuum truck can recover the spilled material. A collection basin is placed below hosing connections prior to tanker bulking procedures.

History of Use and Operation

The loading dock was part of the original operation and is currently in use.

History of Releases

Several minor spills have taken place in the loading dock area.

Conclusions/Remarks

Operations at the main loading dock have a low potential for having caused a significant release to the environment.

SWMU #3 North Loading Dock

Location

The north loading dock is located on the north end of the building.

Unit Description

This loading dock has two bays that join the main building to the latest addition/former solid waste processing area, currently the lamp machine area.

Potential Migration Pathway/Release Controls

There was a drainage sump outside the loading dock area that had an outlet pipe that drained to the ground surface northwest of the building. These were sealed after a spill of 3,000 gallons of a latex topcoat solution in October of 1996. This sump was paved over during the new construction.

History of Use and Operation

This area was enclosed with walls and a roof as part of the last building addition in late 1996 or early 1997. Prior to that, a tanker truck brought liquid from the frac tank located in the south loading dock at that time to the north loading dock for solidification processing. Solid/liquid separation was originally done in plastic lined rolloff boxes in a curbed area in the northeast corner of the building adjacent to the North Loading Dock that was equipped with a recessed floor designed to accommodate a rolloff box. The recessed floor had a 3'x4' catch basin. The rolloff boxes were placed outside overnight to set-up near the flyash silo. In August of 1998, the

frac tank was moved to the newly constructed waste separation area to sit near the waste separation pit. In 2001, the waste separation pit was closed, the frac tank was gotten rid of, and two lamp machines were set up at this location.

History of Releases

During a March 19, 1997 WDNR inspection, liquids were observed by WDNR personnel to be leaking from a lugger box sitting in the north loading dock and running towards the pond. However, only the 3,000-gallon latex topcoat spill in this area is documented to have caused an impact to the soil at the site. This impact was remedied in the day and next day following the spill.

Conclusions/Remarks

There is a potential that spill residuals from the sump drainage outlet may have caused minor soil impacts (other than the latex topcoat solution) prior to when it was plugged in October of 1996.

SWMU #4 Fluorescent Lamp Crushing/Processing Machine

Location

The lamp machine was originally located in the northwestern corner of the original building in the retort room. In 2001 the lamp machine operation was moved to the northernmost building addition where the frac tank and waste solidification pit used to be.

Unit Description

The lamp machines crush the florescent light tube lamps, separate the glass, the phosphor powder, and the aluminum end caps and metal wire. The phosphor powder collects in drums on the floor and is sent for processing in the retort furnaces. The glass is stored in a rolloff box outside the building.

History of Use and Operation

The lamp machine and retort operation were approved for use in 1993, and were located in the northwestern corner of the main building. In 1995, the department approved the use of new lamp machines. In early 2002 a new lamp machine was added.

Waste Management

TCLP mercury and total mercury testing is done on samples of the waste lamp glass and lamp aluminum end-caps and metal wire. The waste lamp glass is stored in a large roll-off outside the building. Filter bags with residual phosphor powder from the lamp machine air emission control equipment are sent through the retort. Onyx's current air permit limits mercury emissions to no more than 0.0956 lbs/hr. Actual emissions are likely much lower. WDNR modeled air concentrations to be 0.3 ug/m³ on an annual basis at the worst area of impact.

History of Releases

No spills of phosphor powder, glass, or other lamp components have been recorded for this operation.

Conclusions/Remarks

Mercury emission fallout from the lamp machine roof stacks is a potential concern. Mercury may have a potential to concentrate at the base of the roof drains.

SWMU #5 Mercury Retort Area

Location

The mercury retort furnaces and equipment are located in the northwest corner of the building in the retort room. The retort furnaces remained at this location after the lamp machines were moved to the building addition.

Unit Description

The retort is a natural-gas fired furnace with two chambers. One chamber is primarily used to heat mercury containing phosphor powder generated by the lamp machines. The mercury is driven off as a vapor to a scrubber and packed tower where it condenses with water, then is collected in a tank as elemental mercury. The other chamber is used to recover mercury from other mercury bearing wastes such as batteries, switches, thermometers etc.

History of Use and Operation

The lamp machine and retort operation were approved for use in 1993 and are still in use.

Waste Management

TCLP mercury and total mercury testing is done on samples of the post-retort powder and mercury contaminated carbon, water, and debris. Mercury contaminated water and carbon is drummed and shipped off-site for disposal.

History of Releases

According to the WDNR Air management Engineer assigned to this facility, the stacks from the retort operation have very low mercury emissions. Onyx lists a mercury vapor release of less than one pound in March of 1997 from the retort oven door to the retort room.

Conclusions/Remarks

The retort operation may have some potential for accumulation of contaminants from fallout to the roof then to the soil at the base of the roof drains.

SWMU #6 Waste Glass Lugger Box Areas

Location

The waste glass lugger box was originally located on the west side of the original building on a concrete pad. The lugger box was moved with the lamp machines to the north end of the building where it rests on a paved section of the parking lot.

Unit Description

The lugger box is open on top and is about 15 cubic-yards in capacity. The department observed a hole at the base of the lugger box in an inspection of the Onyx Special Services facility on April 25, 2002.

History of Use and Operation

The lugger box was noted to not be covered during an inspection in March of 2000, and in April of 2002.

History of Releases

No documented releases are on file for this SWMU.

Conclusions/Remarks

Although the concentration of mercury in the waste lamp glass is very low, there is a potential for mercury to concentrate in the soil downhill from the lugger box due to rainwater draining through the lugger box and running off the pavement into the soil.

SWMU #7 Solid Waste Solidification Area

Location

The waste separation pit and frac tank were located in the northern most part of the building. The Maxon Mixer was located in the main building on the other side of the wall.

Unit Description

The Waste Separation Pit and frac tank were mainly used for solidifying non-hazardous solid waste such as paint, garage pit waste, car wash sludge, and sludgy wash water. The pit measures 44 feet long by 13.5 feet wide by 5 feet deep. The floors and walls of the pit are six-inch concrete construction. The pit has a small sump in one corner. Joints in the concrete were sealed with Voclay Waterstop-RX.

Onyx hired Montgomery Watson (MW) to inspect the pit in May of 2001 for the purpose of closing this activity. MW found two somewhat less than inch-wide cracks running the width of the pit. The cracks had been sealed; however, MW observed that the sealant had come loose in several isolated locations from the scraping and pressure washing during the decontamination process. MW stated that there was no visual evidence that process materials had penetrated the cracks. According to Onyx, the cracks had developed during the construction process and were patched before the pit was put into use.

In the frac tank area, MW observed several scrape marks an inch or less in depth presumably caused by the movement of roll-offs across the floor. None of the scrapes penetrated the concrete. The area was free of process residuals.

History of Use and Operation

This waste solidification process operated from 1993 to 2001. Montgomery Watson stated in their report submitted to the department that field observations of the integrity of the pit did not indicate a "significant potential for subsurface impacts". Onyx has filled in the pit with compacted aggregate followed by a concrete slab.

Onyx maintained a 1,100-gallon polyethylene tank in this area to store oil/water separator sludge generated by customers who had truck washing operations.

Waste Management

Liquids were separated from the waste by settlement in the pit and then pumped to the frac tank. Solids from the pit were mixed with sawdust and disposed of at a landfill. Liquids were solidified by mixture with flyash in the Maxon Mixer inside the building, prior to being shipped off-site for landfill disposal. Liquids were also run through this process without passing through the pit.

History of Releases

Onyx lists a 500-gallon non-hazardous garage pit waste spill in the northern solidification area in August of 1998. During a December 10, 1998 inspection, liquids were observed flowing down the asphalt drive from just north of the solidification pit to a low grassy area west of the asphalt. Onyx personnel said the liquid was water used to clean the backhoe after it was used in the

solidification process. A DNR inspection record from March, 2000 noted a release from the solid waste processing operation on the northern side of the building. Overfilling of the solidification pit apparently caused a release that flowed toward the onsite pond.

Conclusions/Remarks

There is a potential that a release of contaminants into the subsurface occurred from the cracked floor of the Solid Waste Separation Pit. There is a minor potential for contamination occurring in the soil near the pond and into the pond from waste solidification operation spills.

SWMU #8 Household Hazardous Waste Storage Area

Location

Household hazardous waste (HHW) are collected and stored in an eastern portion of the Materials Storage Area near an overhead door. These wastes are also collected at the Main Loading Dock area.

Unit Description

Onyx is classified as a Permanent Collection Facility for accepting household hazardous waste for the local community. The HHW is packed into DOT approved shipping containers. Some of these wastes are consolidated or commingled into other waste streams in the storage pod rooms then stored in the hazardous waste storage pods. The Main (southern) Loading Dock area accommodates large containers, typically roll off boxes for storing containers of HHW paint.

History of Use and Operation

Onyx submitted a plan of operation for this ongoing operation in 1999.

History of Releases

No releases from this operation are on record.

Conclusions/Remarks

It is not likely that this operation has contributed to a release to the environment.

SWMU #9 Trailer Storage/Parking Lot Area

Location

The trailer storage area/parking lot is on the south side of the property.

Unit Description

This is the location of the PCB storage trailer and 10 day transfer area for hazardous waste. The trailer storage/parking lot area drains to a catch basin that discharges to a controlled flow outfall near the pond north of the building. Roll-offs kept in this area are stored on concrete pads.

History of Use and Operation

This unit has been paved with asphalt since the operation began. Onyx inspects the area on a daily basis.

History of Releases

A number of mostly minor spills detailed in the text above have occurred here.

Conclusions/Remarks

There is a potential that rainfall may have flushed spill residuals that have occurred in the parking lot to the soil near the outfall located near the pond.

AREAS OF CONCERN (AOC)

AOC #1 Roof Drain

The roof drain is on the north side of the building and drains to a grassy area close to the building. There is a small potential that mercury fallout from stack emissions could be collected on the roof and concentrated by rainfall to the soil in this area.

SUMMARY AND RECOMMENDATIONS

Onyx Special Services, Inc. has documented several minor spills at this facility. Onyx has responded to each spill and has taken remedial action when necessary. Onyx modifies their operating procedures when deemed prudent to prevent future spills. However, there are areas of potential contamination that should be investigated relating to the activities in AOC #1 and SWMU # 3, 4, 5, 6, 7 and 9. Therefore, WDNR recommends that Onyx be required to submit an initial investigation workplan for some limited sampling to address the following areas as related to the above stated SWMUs and AOC. The site investigation workplan should be submitted for prior WDNR approval and adhere to NR 716.09 and applicable sections of NR 635 and NR 680, Wis. Adm. Code. Any investigation or remedial activities shall be completed under the applicable requirements of Chapters NR 700, NR 635, NR 636, and NR 680, Wis. Adm. Code:

Soil Samples

- The parking lot drainage outfall (sediment) for PAH's, VOC's, and mercury (SWMU #9). *①*
- The base of the roof drainage spout for mercury (AOC# 1 and SWMU #4 and 5). *① How large*
- The edge of the paved area, closest to the pond, on the north side of the building near the glass lugger-box for mercury, PAH's and RCRA metals (SWMU #3, 6 and 7). *① Gough
Trappnell*
- The former glass lugger-box area on the west side of the building off the concrete pad for mercury (SWMU #6). *① How large*

WDNR will use a site investigation trigger level of 0.21 mg/kg mercury as established in EPA's website that calculates generic soil to groundwater residual contaminant levels (RCL's) using Wisconsin default parameters for dilution factor (0.4), fraction organic carbon in soil (0.001), and water-filled soil porosity (0.2). Onyx is not bound to use this trigger-level concentration as an residual cleanup level, rather, Onyx may generate their own site-specific RCL for mercury under NR 720, Wisconsin Administrative Code. Onyx may not generate a site specific trigger level concentration.

Groundwater Sample

- One groundwater sample from a well, temporary well, or geoprobe in the presumed downgradient direction, between the former solid waste solidification pit and the existing pond for SVOC's (method 8270), VOC's, and RCRA Metals (SWMU #7).

The WDNR has determined through this RFA that no investigation or remedial activities are required for SMU #1, 2, or 8 under the applicable requirements of Chapters NR700, NR635, NR636, and NR680, Wis. Adm. Code as related to the RCRA operating permit.

Report Prepared by:

John Feeney and Sandra Miller
Wisconsin Department of Natural Resources

Appendix J
Montgomery Watson October 19, 2004, RCRA Facility
Investigation Report



MWH

October 19, 2004

Mr. John Feeney
Wisconsin Department of Natural Resources
1155 Pilgrim Road
Plymouth, Wisconsin 53073-0408

Re: RCRA Facility Investigation Report
Onyx Special Services, Inc.
1275 Mineral Springs Drive
Port Washington, Wisconsin
FID#: 246076050
EPA ID #: WID 988566543

Dear Mr. Feeney:

On behalf of Onyx Special Services, Inc. (Onyx), MWH has prepared this RCRA Facility Investigation Report for the Onyx facility located at 1275 Mineral Springs Drive in Port Washington, Wisconsin. The Report is being submitted in accordance with Condition #23 of the Department's September 25, 2003 Final Determination to Conditional Approval issued to Onyx.

If you have any questions or comments, please contact me at (262) 376-5082.

Sincerely,

MWH AMERICAS, INC.

Norman H. Cira

N. Michael Cira, CHMM
Supervising Environmental Scientist

Enclosure: RCRA Facility Investigation Report (1 copy)

cc: Kevin Shaver, Onyx Special Services, Inc. (1 copy)
Sandra Miller, WDNR (1 copy)

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RCRA FACILITY INVESTIGATION REPORT

**ONYX SPECIAL SERVICES, INC.
1275 MINERAL SPRINGS DRIVE
PORT WASHINGTON, WISCONSIN**

**FID#: 246076050
EPA ID #: WID988566543**

October 2004

**Prepared For:
Onyx Special Services, Inc.
Port Washington, Wisconsin**

...

**Prepared By:
MWH
Madison, Wisconsin**

Project No. 2082678.01160101



MWH

MONTGOMERY WATSON HARZA

RCRA FACILITY INVESTIGATION REPORT

ONYX SPECIAL SERVICES, INC.
1275 MINERAL SPRINGS DRIVE
PORT WASHINGTON, WISCONSIN

FID#: 246076050
EPA ID #: WID988566543

October 2004

"I, Leo B. Linnemanstons, hereby certify that I am a hydrogeologist as that term is defined in s. NR 600.03 (98), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 635 and 685, Wis. Adm. Code."

Leo B. Linnemanstons
Leo B. Linnemanstons, Hydrogeologist

October 19, 2004
Date

"I, N. Michael Cira, hereby certify that I am a scientist as that term is defined in s. NR 712.03 (3), Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 635 and 685, Wis. Adm. Code."

Norman H. Cira
N. Michael Cira, Supervising Scientist

October 19, 2004
Date

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1.0 INTRODUCTION

On behalf of Onyx Special Services, Inc. (Onyx), MWH has prepared this report for the RCRA Facility Investigation of the Onyx facility located at 1275 Mineral Springs Drive in Port Washington, Wisconsin. The report is being submitted in accordance with Condition #23 of the WDNR's September 25, 2003 Final Determination to Conditional Approval letter issued to Onyx.

This report has been prepared in accordance with Chapter NR 716, Wisconsin Administrative Code (WAC). The report describes the investigation activities performed as described in the Work Plan developed based on the results of the WDNR's *RCRA Facility Assessment* dated July 3, 2003. In addition, the report also includes additional sampling efforts described in the *Initial RFI Investigation Results* report sent to the WDNR on June 8, 2004, and subsequently approved by WDNR in a June 21, 2004 telephone conversation with MWH. Finally, several additional sediment samples were collected after the second series of samples to provide a more statistically representative characterization.

1.1 SITE INFORMATION

- Project Title: RCRA Facility Investigation
Onyx Special Services, Inc.
1275 Mineral Springs Drive
Port Washington, Wisconsin
- Current Property Owner: Onyx Special Services, Inc.
Address: 125 South 84th Street, Suite 200
Milwaukee, Wisconsin 53214
Phone: (414) 479-7800
- Client Contact: Mr. Kevin Shaver
Onyx Special Services, Inc.
1275 Mineral Springs Drive
Port Washington, Wisconsin
Phone: (262) 243-8909
- Consultant: MWH Americas, Inc.
Address: 5021 Pine Road
Cedarburg, Wisconsin 53012
Contact: Mr. N. Michael Cira
Phone: (262) 376-5082

- Site Name: Onyx Special Services, Inc.
Mineral Springs Facility
EPA ID # WID 988566543
FID #246076050
- Location: NW ¼, of the SE ¼ of Section 32 , T11N, R22E
1275 Mineral Springs Drive
City of Port Washington
Ozaukee County, Wisconsin

1.2 BACKGROUND INFORMATION

1.2.1 Site Description

The Onyx Special Services, Inc. (Onyx)-Mineral Springs facility is located in a City of Port Washington industrial park (see Drawing A1). The rectangular shaped parcel comprises approximately 11 acres (see Drawing B1) and includes two site buildings. The approximate northern half of the facility consists of vacant land and a large stormwater retention pond. The majority of facility run-off discharges to this pond. There are two intermittent creeks running north-south approximately 500 feet east and west of the facility. The creeks ultimately discharge to Lake Michigan near the WE Energies power plant, located to northeast. The southern half of the facility is comprised primarily of asphalt and concrete pavement, as well as the main facility buildings.

1.2.2 Site History

Historically, the Onyx property was used as agricultural land. For some period of time, the property was also used as a lawnmower test area by the neighboring Bolens/Garden Way lawn tractor factory. In 1989, the original hazardous waste facility was constructed by Aqua Tech. Subsequently, the facility was purchased by Superior Special Services, Inc., now named Onyx Special Services, Inc.

The facility is currently up for RCRA license renewal and expansion. As such, the WDNR conducted a RCRA Facility Assessment (RFA) inspection of the facility on April 25, 2002 as the first part of the RCRA Corrective Action Process. Based on the RFA inspection and a review of available Department files, the WDNR concluded that there was sufficient information to require completion of some limited sampling in order to determine whether hazardous constituents may have been released to the environment.

1.2.3 Previous Investigations

In 1990, an Environmental Assessment was completed at the facility. Results are contained in the facility's Feasibility and Plan of Operation. The results indicate that there were no impacts to endangered species: sensitive species, habitats or ecosystems; wetlands; outstanding or exceptional resource water; and historical or archaeological sites.

Furthermore, in a September 25, 2003 letter to Onyx, the WDNR indicated that no Environmental Impact Statement (EIS) was required for expansion of the facility. The letter also indicated that the water quality standards for wetlands in Chapter NR 103, Wis. Adm. Code, had been met and the needs requirements of s. 289.28, Stats. have also been met.

On April 25, 2003 the WDNR conducted a RCRA Facility Assessment (RFA) of the facility. The results of the inspection are included in the Department's RFA report dated July 3, 2003. The RFA report includes an examination of facility waste operations, a discussion of the facility's Solid Waste Management Units (SWMUs) and Areas of Concern (AOC), documentation of facility releases, and recommendations for further action.

The RFA report outlined the following waste operations at the facility:

- Indoor hazardous waste storage of various waste types and waste codes.
- Mercury reclamation via operation of a lamp crusher and retort furnace.
- Operation of a 10-day transfer facility to logistically accumulate and coordinate economic shipments of waste.
- Operation of a TSCA storage facility for materials such as fluorescent light ballasts.
- Solidification of non-hazardous solid wastes from 1993 to 2001.

Based on these operations, the WDNR identified 9 SWMUs and 1 AOC as listed below.

SWMU/ AOC	NAME	LOCATION
SWMU #1	Hazardous waste storage rooms	Three separate rooms in Main Building
SWMU #2	South loading dock	South end of the Main Building
SWMU #3	North loading dock	North end of Main Building
SWMU #4	Fluorescent lamp crushing/processing machine	This was originally used in the Northwest corner of the original building. Now used in the Northwest corner of the building addition.
SWMU #5	Mercury retort area	Northwest corner of original building in retort room
SWMU #6	Waste glass lugger box area	Originally on the West side of original building. Now on the paved area inside the north end of the building addition.

SWMU/ AOC	NAME	LOCATION
SWMU #7	Former solid waste solidification area	Separation pit and frac tank formerly located in northernmost portion of the Main Building. Maxon mixer previously located directly to the south through the wall.
SWMU #8	Household hazardous waste storage area	Eastern portion of the Materials Storage Area.
SWMU #9	Trailer storage/Parking lot area	South side of facility
AOC #1	Roof drain	North side of the facility

The WDNR concluded that no investigation or remedial activities are required at SWMUs #1, #2, and #8. However, at the remaining areas, WDNR concluded there was a potential for environmental impacts and that limited sampling was required to investigate this possibility. As part of the investigation, the WDNR required that Onyx submit an investigative work plan prepared in accordance with applicable portions of Chapters NR 635, NR 680, and NR 716.09, Wis. Adm. Code, to include the following:

SWMU/ AOC	LOCATION	MEDIA	ANALYTE(S)
SWMU #9	Parking lot drainage outfall	Sediment	PAHs, VOCs, Mercury
AOC #1, SWMU #4 and #5	Base of roof drainage spout	Soil	Mercury
SWMU # 3, #6, and #7	Edge of paved area on north side of building	Soil	PAHs, Mercury, RCRA metals
SWMU # 3, #6, and #7	Edge of paved area on north side of building	Groundwater	VOCs, SVOCs, RCRA metals
SWMU #6	Former glass lugger box area, west side of building	Soil	Mercury

The WDNR established 0.21 mg/kg as the site investigation trigger level for mercury. This trigger level does not preclude use of a site-specific mercury residual contaminant level, should one be required. No other trigger levels have been established by WDNR.

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2.0 INVESTIGATION METHODS

Soil, sediment, and groundwater samples were collected at various locations across the facility (Drawing B1), in order to evaluate the potential for environmental impacts from waste management activities. A Wisconsin Certified laboratory (CTI Laboratories in Baraboo, Wisconsin) was used to analyze the samples. The following initial sampling activities were included in the RFI Investigation Work Plan:

- 2 hand-auger soil borings (evaluate AOC #1, SWMU #4/#5 and SWMU #6)
- 1 soil boring for soil sampling (evaluate SWMU #3/#6/#7)
- 1 temporary well for a groundwater sample. (evaluate SWMU #3/#6/#7)
- 1 sediment sample (evaluate SWMU #9)

Based on the initial sample results the following second set of sampling activities was completed for the RFI Investigation:

- Three additional hand-auger soil borings and an extension in depth for one of the original hand auger soil borings (evaluate AOC #1).
- A second round of groundwater sampling (evaluate SWMU # 3/#6/#7).
- One additional sediment sample (evaluate SWMU #9).

Based on the second set of sample results, the following third set of sampling activities was completed for the RFI Investigation:

- Ten additional sediment samples to provide a better statistical characterization (evaluate SWMU #9).

2.1 HAND-AUGER SOIL SAMPLING

2.1.1 General Discussion of Methods

A decontaminated stainless steel bucket hand-auger was used to collect soil samples at each sampling location (see Drawing B1 for locations). Initially, separate samples were collected at half-foot intervals from ground surface to a depth of 1.0 feet. Additional sampling involved collecting samples at half-foot intervals from ground surface to a depth of 2.0 feet.

Each discrete half foot sample interval was individually placed in a decontaminated stainless steel bowl, and then transferred to appropriate laboratory-supplied containers,

labeled, and maintained in coolers at 4°C. Laboratory soil samples were shipped in a cooler on ice via overnight courier under chain-of-custody protocol to a WDNR certified laboratory for analyses.

The hand-auger soil samples were analyzed for mercury using Method 7471A. The next deeper sample from each location was only analyzed for mercury only if the concentration in the sample just above exceeded the site investigation trigger level of 0.21 mg/kg.

2.1.2 Initial Sampling

Initially, two hand-auger borings were conducted on April 22, 2004 as part of the RCRA Facility Investigation. One hand-auger boring (HA01) was located at the base of the fixed piping connected to the roof drainage spout, also located on the west side of the building (SWMU #4, #5, and AOC #1). One sample (HA02) was collected near the former glass lugger box area on the west side of the building (SWMU #6). The boring was placed just west of the pavement in this area at a point where relative elevations suggest surface run-off from the pavement would most likely occur.

2.1.3 Additional Sampling

Additional soil samples were collected on July 1, 2004 from three locations (HA01A, HA01B, and HA01C), as well as deeper samples from the 1.0 to 1.5 foot and 1.5 to 2.0 foot depth intervals at original location HA01. These deeper samples were necessitated by mercury concentrations above the prescribed trigger level. Samples were collected in the same manner as described above.

2.2 SOIL BORING SOIL SAMPLING

2.2.1 General Discussion of Methods

One soil boring (MW01) was installed on April 22, 2004 using a truck-mounted drill rig equipped with 4.25-in. inside diameter hollow stem augers (see Drawing B1 for location). Upon the completion of soil sampling, the borehole was implemented with a temporary monitoring well.

Soil samples were collected at 2.5-ft intervals to log soil stratigraphy. Each soil sample was visually classified using American Society for Testing and Materials (ASTM) D-2488 Standard Method for Classification of Soils in the Field. Information on the completed soil boring was recorded directly on a standard soil boring log form in the field. The boring log is provided in Appendix A.

The laboratory soil samples were immediately placed in appropriate laboratory-supplied containers, preserved (if necessary), labeled, and maintained in coolers at 4°C. The laboratory soil samples were shipped in a cooler on ice via overnight courier under chain-of-custody protocol to a WDNR certified laboratory (CTI Laboratories in Baraboo,

Wisconsin) for analyses. The samples were analyzed for PAHs (Method 8310), mercury by Method 7471A, and total concentrations of the remaining 7 RCRA metals (arsenic, barium, cadmium, chromium, lead, selenium, and silver) by Method 6010. Laboratory analytical reports are provided in Appendix B.

2.2.2 Initial Sampling

One soil boring (MW01) was conducted to approximately five feet below the watertable (estimated total depth of 16 feet). This boring was conducted at the edge of paved area, closest to the pond, on the north side of the building (SWMU #3, #6, #7). The surface soil sample was selected for laboratory analysis. In addition, because no impacts were identified, the depth interval just above the water table was selected as the second sample for analysis.

2.2.3 Additional Sampling

No additional soil boring sampling was required.

2.3 TEMPORARY WELL GROUNDWATER SAMPLING

2.3.1 General Discussion of Methods

One temporary monitoring well (MW01) was installed on April 22, 2004 north of the building at the edge of the pavement to investigate compounds of concern in groundwater (see Drawing B1 for location). The temporary well was constructed of 2-inch diameter Schedule 40 PVC pipe casing and well screen. The well screen was 10 feet long with a standard slot size of 0.010 inches, and was set to intersect the shallow water table. Filter pack sand was placed around the screened interval, and an annular seal of bentonite was placed to the surface. The temporary monitoring well was completed with a stick-up protector and locking cap.

The well was developed on April 23, 2004 using a decontaminated, stainless steel bailer. The well was gently surged and bailed to remove the sediments in the well and filter pack after installation. Development continued until the well was bailed dry three times. The well was then allowed approximately one week for sufficient water to accumulate for sampling purposes.

A peristaltic pump and new tubing was used to collect the water samples. The tubing was extended down to the approximate midpoint of the well screen to limit turbidity in the sample. Prior to sampling, the water level was measured in order to calculate the approximate volume of water present in the well. The well was then purged until 3 well volumes were removed, or until the well was purged dry.

After sampling was completed, the temporary well was abandoned on August 5, 2004 by backfilling with chipped bentonite in accordance with s. NR 141.25, WAC. Well information including the well construction form, well development form, and well abandonment form is provided in Appendix A.

2.3.2 Initial Sampling

The first groundwater sample collected on May 4, 2004 was immediately placed in appropriate laboratory-supplied containers, preserved (if necessary), labeled, and maintained in coolers at 4°C. The exception was the sample for metals analysis that was first field-filtered with a 45 micron filter. The initial sample was analyzed for VOCs (8260), SVOCs (8270), and dissolved metals by Method 6010 (except for mercury by Method 7471A). Laboratory analytical reports are provided in Appendix B.

2.3.3 Additional Sampling

The second groundwater sample collected on July 1, 2004 was managed in the same manner as the first. As approved by WDNR, the groundwater second sample was analyzed only for barium and selenium by Method 6010 in order to confirm their original concentrations above the respective Chapter NR 140, Wis. Adm. Code, Preventive Action Limits (PALs).

2.4 SEDIMENT SAMPLING

2.4.1 General Discussion of Methods

Sediment samples were collected in the area of the parking lot drainage outfall that discharges into the retention pond in the northern half of the facility (see Drawing B1 for location). The samples were collected using a decontaminated stainless steel spoon. Discreet sediment samples were placed in a decontaminated stainless steel bowl, mixed, and placed in to the appropriate sample containers. The outsides of the sample containers were rinsed off prior to being placed into the sample cooler.

The sediment samples were submitted for analysis in appropriate laboratory-supplied container, labeled, and maintained in coolers at 4°C.

2.4.2 Initial Sampling

Initially, one sediment sample (location SD01) was collected on April 22, 2004 near the terminus of the parking lot storm water outfall at the shoreline of the pond (SWMU #9). The initial sample was analyzed for mercury by Method 7471A; PAHs by Method 8310, and VOCs by Method 8260. Laboratory analytical reports are provided in Appendix B.

2.4.3 Additional Sampling

Because the initial mercury sample result was slightly above its WDNR Midpoint Effect Concentration screening level for sediments, a second sample was collected on July 1, 2004 in the vicinity of the first sample location in order to confirm the original mercury result.

Because the second sample had a mercury concentration approximately 5 times the first sample, a statistical sampling method was used in an attempt to determine a representative concentration value for the location. Therefore, ten additional samples were collected on August 5, 2004 within a 5 by 20-foot grid around original sample location SD01. The grid was divided into 100 one by one-foot grid spaces (see Figure 1 for grid). Samples were collected from grid spaces randomly selected by the 'RANDBETWEEN' function in the Microsoft Excel spreadsheet program. This function returns a randomly generated number between upper and lower limits assigned by the user (in this case 1 to 100). This method of selecting locations for sampling eliminated potential bias in the sampling design.

The overall grid dimensions (5 by 20 ft) were chosen considering 1) being able to collect samples spatially comparable to SD01, and 2) the practical accessibility into the pond by the sampler from the shoreline (i.e. being able to stand in shallow water). In the field, the grid was established using a tape measure to form the 20-foot side of the grid parallel to the pond shoreline and a wooden lathe with marked 1-foot intervals to form the perpendicular grid dimension.

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3.0 RESULTS

3.1 SOIL

3.1.1 Regional Geologic Information

According to the WDNR's RCRA RFA report dated July 3, 2003, nearby private water supply well logs document the geological conditions to generally consist of approximately 160 feet of glacial clay soil over dolomite bedrock. Well logs at the adjacent Bolen's property to the north indicate stiff brown silty clay to the end of the boring at 20 feet. Other boring logs from the Bolen's site indicate a sand seam at 9 to 11 feet below ground surface. According to the September 1970 Soil Survey of Ozaukee County published by the US Department of Agriculture, soils in the vicinity of the facility consist of the Kewaunee-Manaua Association type. These soils are characterized as well drained to somewhat poorly drained soils that have a subsoil of clay to silty clay loam formed in thin loess and silty clay glacial till.

3.1.2 Investigation Results

The boring log for MW01 describes the soils encountered from the ground surface to a depth of approximately 15 feet. At the ground surface is approximately 1 ft of top soil that is underlain by approximately 0.5 feet of sand and gravel fill. Beneath the fill material, soils consist mostly of brown silt and clay with traces of fine to coarse sand. The brown silt and clay is likely a glacial deposit.

Soil results are presented in Table 1, and the sample locations are depicted on Drawing B1.

Mercury was not detected above the RFI trigger level of 0.21 mg/kg at hand-auger location HA02. This sample location was intended to evaluate potential soil impacts from run-off near the former glass lugger box on the west side of the building (SWMU #6).

Mercury was detected above the RFI trigger level of 0.21 mg/kg at hand-auger location HA01, HA01A, HA01B, and HA01C. These sample locations were intended to evaluate potential soil impacts from at the base of the roof drainage spout (AOC #1, SWMU #4 and #5). Mercury was detected above the RFI trigger level at all four hand-auger locations. The total depth of impact above the RFI trigger level decreases the further one goes downstream in the drainage swale. For example, at the base of the roof drainage spout (furthest upstream location in the drainage swale) the total depth of impact is approximately 2.0 feet. At approximately 20 and 40 feet downstream, the total depth of impact is approximately 1.0 foot. At approximately 60 feet downstream, the total depth of impact is approximately 0.5 feet. Based on this information, it is MWH's opinion that mercury impacts have been adequately characterized and the process for completing an appropriate remedial solution can begin.

There was one exceedance of an NR 720 WAC Residual Contaminant Level (RCL) at soil boring MW01. This sample location was intended to evaluate potential soil impacts near the edge of the paved area on the north side of the building (SWMU # 3, #6, and #7). Samples from the 0-1.0 ft and 4.0-5.0 ft intervals contained arsenic at concentrations (17.5 mg/kg and 11.8 mg/kg) above its RCL for direct contact and protection of groundwater. However, these arsenic concentrations are within the range of natural occurrence in Wisconsin and do not appear to be the result of site activities. In addition, a groundwater sample from this location did not contain arsenic above its PAL.

Thus, it is MWH's opinion that these arsenic concentrations do not warrant further investigation or remediation.

3.2 GROUNDWATER

3.2.1 Regional Hydrogeologic Information

According to the WDNR's RCRA RFA report dated July 3, 2003, there are three aquifers present in the vicinity of the site and include the saturated portion of the unconsolidated glacial deposits, the dolomite aquifer, and the deep sandstone aquifer. Groundwater flow in the dolomite and sandstone aquifers is predicted to trend towards the east. Groundwater flow in the saturated portion of the unconsolidated glacial deposits may be towards the pond on the northern half of the facility. Borings at the adjacent Bolen's property to the north indicate the depth to the shallow water table is between 9 and 11 feet.

3.2.2 Investigation Results

Groundwater monitoring information from temporary well MW01 provides an insight into the hydrogeology at the site. Depth to groundwater ranged from 9.35 ft on May 4, 2004 to 9.26 ft on August 5, 2004. Because the temporary well bailed dry during development but could be sampled by low flow methods, the site soils where the well is screened are interpreted to have moderate (silt) to low (clay) permeability.

Groundwater results are presented in Table 2, and the well location is indicated on Drawing B1.

In the first round of sampling, no VOCs were detected, and only two PAHs were detected just above the detection limit and well below their PAL. The only groundwater standard exceedance was of the PAL for barium and selenium at monitoring well MW01. Barium was detected at a concentration of 455 µg/L just exceeding the PAL of 400 µg/L. Selenium was detected at a concentration of 24.3 µg/L just exceeding the PAL of 10 µg/L. This sample location was intended to evaluate potential groundwater impacts near the edge of the paved area on the north side of the building (SWMU # 3, #6, and #7).

During the second round of sampling, the barium concentration decreased from 455 µg/L to 422 µg/L. The selenium concentration decreased from 24.3 µg/L to less than the detection limit of 5.1 µg/L. The barium concentration is just above the PAL of 400 µg/L, and the selenium concentration is now less than the PAL of 10 µg/L.

Thus, it is MWH's opinion that there is no evidence of impacts to groundwater and no further investigation or remediation is necessary.

3.3 SEDIMENT

3.3.1 Regional Information

Facility topography is primarily influenced by the asphalt parking lot grading. The parking lot elevations slope to a storm water collection basin located in the south-central portion of the lot. The topography of the remaining areas trend downward, to the north and the surface pond. Drainage at the facility is primarily towards the north, towards the pond, with secondary flow to Mineral Spring Drive to the east and Maritime Drive to the south.

3.3.2 Investigation Results

Sediment results are presented in Table 3 (first two sets of samples), Table 4 (results and summary statistics from the third set of ten samples), and Table 5 (summary statistics for all twelve sediment samples associated with SD01) and the sample location are indicated on Drawing B1 and Figure 1.

The sediment results were compared to values presented in the Consensus-Based Sediment Quality Guidelines, WDNR Interim Guidance (December 2003). The midpoint effect concentration (MEC) was selected as the most appropriate screening level for comparisons to results at the site. These sample locations were intended to evaluate potential sediment impacts from the parking lot drainage outfall (SWMU #9).

At location SD01, several PAHs and one VOC were detected at concentrations well below their respective MECs. Thus, it is MWH's opinion that there is no evidence of impacts to sediment and no further investigation or remediation for these compounds is necessary.

Mercury results were varied, with concentrations ranging from 0.035 to 4.7 mg/kg, with a standard deviation of 1.63 mg/kg. In addition, the mean value for mercury was 1.48 mg/kg, and the median value was 0.69 mg/kg. This is compared to the MEC for mercury which is 0.64 mg/kg. Four sample results also exceeded the Probable Effect Concentration (PEC) for mercury. As shown in Figure 2, the distribution of mercury is random, with no obvious pattern.

Based on these results, it is MWH's recommendation that a surface water sample be collected at the retention basin discharge point to evaluate water quality as it leaves the site.

4.0 SUMMARY

The following table summarizes the results of the current investigation:

SWMU/ AOC	LOCATION	MEDIA	RECOMMENDATION
SWMU #9	Parking lot drainage outfall	Sediment	Investigate surface water quality at the discharge point for retention pond
AOC #1, SWMU #4 and #5	Base of roof drainage spout	Soil	Begin process for completing an appropriate remedial solution.
SWMU # 3, #6, and #7	Edge of paved area on north side of building	Soil	No further action
SWMU # 3, #6, and #7	Edge of paved area on north side of building	Groundwater	No further action
SWMU #6	Former glass lugger box area, west side of building	Soil	No further action

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2082678.01160101-MAD1

Table 1
Summary of Soil Analytical Results
RCRA Facility Investigation
ONYX Special Services, Inc.
1275 Mineral Springs Drive
Port Washington, Wisconsin

Location ID:		HA01	HA01 Dup	HA01	HA01	HA01	HA01A	HA01A	HA01A	HA01B	HA01B	HA01B	HA01C	HA01C	HA02	MW01	MW01
Depth:		0-0.5	0-0.5	0.5-1.0	1.0-1.5	1.5-2.0	0-0.5	0.5-1.0	1.0-1.5	0-0.5	0.5-1.0	1.0-1.5	0-0.5	0.5-1.0	0-0.5	0-1.0	4.0-5.0
Sample Date:		4/22/2004	4/22/2004	4/22/2004	7/1/2004	7/1/2004	7/1/2004	7/1/2004	7/1/2004	7/1/2004	7/1/2004	7/1/2004	7/1/2004	7/1/2004	4/22/2004	4/22/2004	4/22/2004
Metals	Units	GW RCL	Ind DC RCL	Result	Duplicate	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Arsenic	mg/kg	0.58	1.91	--	--	--	--	--	--	--	--	--	--	--	--	17.5	11.8
Barium	mg/kg	160	71500	--	--	--	--	--	--	--	--	--	--	--	--	68.6	84.6
Cadmium	mg/kg	0.75	1020	--	--	--	--	--	--	--	--	--	--	--	--	0.26	0.28
Chromium	mg/kg	200000000	1530000	--	--	--	--	--	--	--	--	--	--	--	--	11.7	17.4
Lead	mg/kg	NE	500 (4)	--	--	--	--	--	--	--	--	--	--	--	--	5.6	5.9
Mercury	mg/kg	0.21	NE	2.1	3.8	0.25	0.19	0.23	1.5	0.24	0.073	2.4	0.49	0.017	1.9	0.066	0.017
Selenium	mg/kg	0.51	5110	--	--	--	--	--	--	--	--	--	--	--	--	<0.70	<0.69
Silver	mg/kg	3.1	5110	--	--	--	--	--	--	--	--	--	--	--	--	<0.23	<0.23
Poly-Aromatic Hydrocarbons																	
Anthracene	mg/kg	650	307000	--	--	--	--	--	--	--	--	--	--	--	--	0.0037 (J,P)	<0.0024
Benzo(a)anthracene	mg/kg	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	0.017	<0.00048
Benzo(e)pyrene	mg/kg	0.41	0.392	--	--	--	--	--	--	--	--	--	--	--	--	0.027	<0.0024
Benzo(b)fluoranthene	mg/kg	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	0.054	0.0070
Benzo(g,h,i)perylene	mg/kg	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	0.028	0.0090
Benzo(k)fluoranthene	mg/kg	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	0.012	0.0070 (P)
Fluoranthene	mg/kg	310	40900	--	--	--	--	--	--	--	--	--	--	--	--	0.040	0.0059 (P)
Indeno(1,2,3-cd)pyrene	mg/kg	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	0.025 (P)	<0.0024
Phenanthrene	mg/kg	NS	NS	--	--	--	--	--	--	--	--	--	--	--	--	0.016 (B)	<0.0024
Dry Weight	%			79.7	82.2	74.4	77.1	74.3	59.2	70.7	75.4	54.6	75.3	82.5	75.1	78.5	83.5

Notes:

- Only compounds detected on at least one occasion are summarized in this table.
- RCL = Residual Contaminant Level
- Industrial direct contact (Ind DC) RCL values are based on generic industrial scenario soil standards conservatively based on default site conditions and equations provided in Chapter NR 720, Wis. Adm. Code.
- Lead Ind DC RCL taken from NR720, Table 2.
- Groundwater (GW) RCL values are determined for protection of groundwater conservatively based on default site conditions and equations provided in Chapter NR 720, Wis. Adm. Code.
- NE = RCL was not readily calculated based on available information.
- NS = No RCL was readily calculated based on available information.
- (B) = Analyte detected in associated Method Blank.
- (P) = Concentration of analyte differs more than 40% between primary and confirmation analysis.
- (J) = Indicates value is between limit of detection (LOD) and limit of quantitation (LOQ).
- Bolded value indicates an exceedance of the RCL.
- = Not analyzed for this compound.

Table 2
Summary of Groundwater Analytical Results
RCRA Facility Investigation
ONYX Special Services, Inc.
1275 Mineral Springs Drive
Port Washington, Wisconsin

		Location ID:		MW01	
		Sample Date:		5/4/2004	7/1/2004
Dissolved Metals	Units	ES	PAL	Result	Result
Arsenic	ug/L	10	1	0.87 (J)	NA
Barium	ug/L	2000	400	455	422
Cadmium	ug/L	5	0.5	<0.88	NA
Chromium	ug/L	100	10	<4.1	NA
Lead	ug/L	15	1.5	<2.8	NA
Mercury	ug/L	2	0.2	<0.11	NA
Selenium	ug/L	50	10	24.3	<5.1
Silver	ug/L	50	10	<2.7	NA
Poly-Aromatic Hydrocarbons (PAHs)					
Bis(2-ethylhexyl)phthalate	ug/L	6	0.6	0.36 (J)	NA
Di-n-butylphthalate	ug/L	100	20	1.2 (J,B)	NA

Volatile Organic Compounds (VOCs) were not detected.

Notes:

1. Only compounds detected on at least one occasion are summarized in this table.
2. ES = Enforcement Standard, Chapter NR 140, Wisconsin Administrative Code.
3. PAL = Preventive Action Limit, Chapter NR 140, Wisconsin Administrative Code.
4. (B) = Analyte detected in associated Method Blank.
5. (J) = Indicates value is between limit of detection (LOD) and limit of quantitation (LOQ).
6. Italicized value indicates an exceedance of the PAL.
7. NA = Not analyzed for this compound.

Table 3
Summary of Sediment Analytical Results
RCRA Facility Investigation
ONYX Special Services, Inc.
1275 Mineral Springs Drive
Port Washington, Wisconsin

	Location ID:				SD01	SD01
	Sample Date:				4/22/2004	7/1/2004
	Units	TEC	MEC	PEC	Result	Result
Percent Solids	%				73.6	53.8
Metals						
Mercury	mg/kg	0.18	0.64	1.1	0.67	3.2
Poly-Aromatic Hydrocarbons						
Benzo(a)pyrene	mg/kg	0.15	0.80	1.45	0.15	NA
Benzo(b)fluoranthene	mg/kg	0.24	6.82	13.4	0.29	NA
Benzo(g,h,i)perylene	mg/kg	0.17	1.69	3.20	0.14 (P)	NA
Fluoranthene	mg/kg	0.42	1.33	2.23	0.14 (P)	NA
Indeno(1,2,3-cd)pyrene	mg/kg	0.20	1.70	3.20	0.13 (P)	NA
Volatile Organic Compounds						
2-Butanone (6)	mg/kg	NS	NS	NS	0.50 (J,B)	NA

Notes:

1. Only compounds detected on at least one occasion are summarized in this table.
2. TEC = Consensus-Based Sediment Quality Guidelines - Threshold Effect Concentration
3. MEC = Consensus-Based Sediment Quality Guidelines - Midpoint Effect Concentration
4. PEC = Consensus-Based Sediment Quality Guidelines - Probable Effect Concentration
5. Consensus-Based Sediment Quality Guidelines, WDNR Interim Guidance, December 2003
6. Compound was also detected in field blank at a concentration of 0.43 mg/kg.
7. NS = No sediment guidelines were available.
8. (P) = Concentration of analyte differs more than 40% between primary and confirmation analysis.
9. (J) = Indicates value is between limit of detection (LOD) and limit of quantitation (LOQ).
10. (B) = Analyte detected in associated Field Blank.
11. Bolded value indicates an exceedance of the MEC.
12. NA = Not analyzed for this compound.

Table 4
 Summary of Sediment Analytical Results Addendum - 8/5/2004 Mercury Results Only
 RCRA Facility Investigation
 ONYX Special Services, Inc.
 1275 Mineral Springs Drive
 Port Washington, Wisconsin

		Location ID:			SD01a	SD01b	SD01c	SD01d	SD01e	SD01f	SD01g	SD01h	SD01i	SD01j
		Sample Date:			8/5/2004	8/5/2004	8/5/2004	8/5/2004	8/5/2004	8/5/2004	8/5/2004	8/5/2004	8/5/2004	8/5/2004
Compound	Units	TEC	MEC	PEC	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Mercury	mg/kg	0.18	0.64	1.1	0.45	3.1	0.12	0.040	4.7	0.82	0.035	0.71	0.49	3.4

Summary Statistics

Mean	1.39
Standard Error	0.53
Median	0.60
Standard Deviation	1.69
Sample Variance	2.85
95% Confidence	1.05
Range	4.665
Minimum	0.035
Maximum	4.7
Count	10

Notes:

1. TEC = Consensus-Based Sediment Quality Guidelines - Threshold Effect Concentration
2. MEC = Consensus-Based Sediment Quality Guidelines - Midpoint Effect Concentration
3. PEC = Consensus-Based Sediment Quality Guidelines - Probable Effect Concentration
4. Consensus-Based Sediment Quality Guidelines, WDNR Interim Guidance, December 2003
5. Bolded value indicates an exceedance of the MEC.

BJK/vlr

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Table 5
Summary of Sediment Analytical Results Addendum - All Mercury Results
RCRA Facility Investigation
ONYX Special Services, Inc.
1275 Mineral Springs Drive
Port Washington, Wisconsin

Compound	Units	Location ID: Sample Date:			SD01 4/22/2004	SD01 7/1/2004	SD01a 8/5/2004	SD01b 8/5/2004	SD01c 8/5/2004	SD01d 8/5/2004	SD01e 8/5/2004	SD01f 8/5/2004	SD01g 8/5/2004	SD01h 8/5/2004	SD01i 8/5/2004	SD01j 8/5/2004
		TEC	MEC	PEC	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Mercury	mg/kg	0.18	0.64	1.1	0.67	3.2	0.45	3.1	0.12	0.040	4.7	0.82	0.035	0.71	0.49	3.4

Summary Statistics

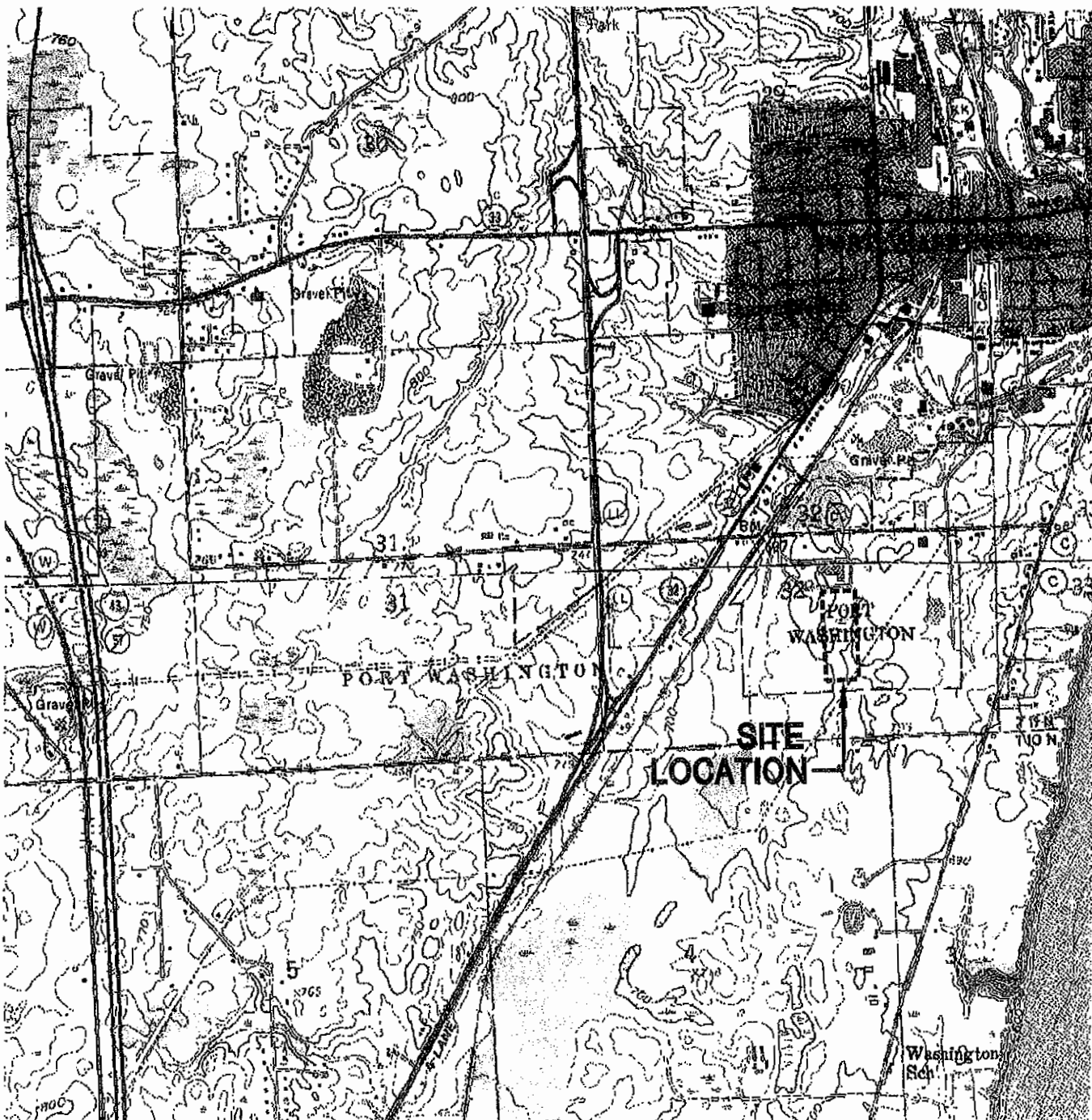
Mean	1.48
Standard Error	0.47
Median	0.69
Standard Deviation	1.63
Sample Variance	2.67
95% Confidence	0.92
Range	4.665
Minimum	0.035
Maximum	4.7
Count	12

Notes:

1. TEC = Consensus-Based Sediment Quality Guidelines - Threshold Effect Concentration
2. MEC = Consensus-Based Sediment Quality Guidelines - Midpoint Effect Concentration
3. PEC = Consensus-Based Sediment Quality Guidelines - Probable Effect Concentration
4. Consensus-Based Sediment Quality Guidelines, WDNR Interim Guidance, December 2003
5. Bolded value indicates an exceedance of the MEC.

R21E | R22E

TION | TTIN



NOTE

BASE MAP DEVELOPED FROM THE PORT WASHINGTON WEST, WISCONSIN AND CEDARBURG, WISCONSIN 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLE MAPS, DATED 1959. PHOTOREVISED 1971 AND 1976 WITH MINOR REVISION 1994. U.S.G.S. AERIAL PHOTOGRAPHS DATED MARCH 31, 2000 WERE ALSO USED TO LOCATE THE SITE.



QUADRANGLE LOCATION



SCALE IN FEET

Developed By	NMC	Drawn By	LCL
Approved By	<i>Michael A. ...</i>	Date	11-24-03
Reference			
Revisions	△ Revised drawing number. 9-17-04/lcl/bk/nmc		

SITE LOCATION MAP

ONYX SPECIAL SERVICES, INC.
1275 MINERAL SPRINGS DRIVE
PORT WASHINGTON, WISCONSIN

Drawing Number
2082678
01160101 **A1**



This document has been developed for a specific application and may not be used without the written approval of Montgomery Watson Harza.

Management Review
Other

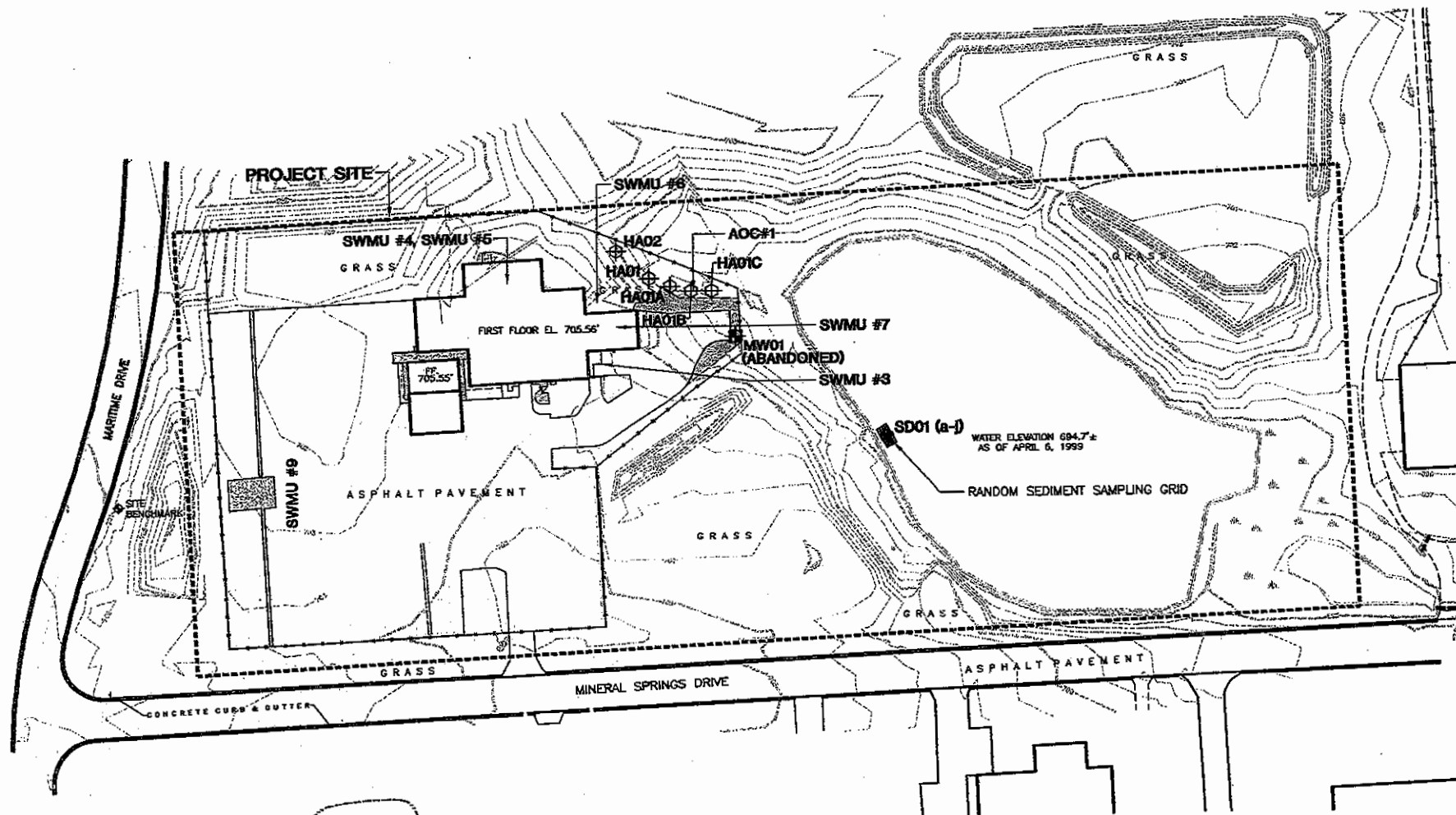
11-24-03

Technical Review
Project Manager NMC

11-23-03

Graphic Standards LCL
Lead Professional

QUALITY CONTROL



LEGEND

- HA01** HAND AUGER BORING LOCATION AND NUMBER
- MW01** SOIL BORING AND TEMPORARY WELL LOCATION AND NUMBER
- SD01** SEDIMENT SAMPLE LOCATION AND NUMBER
- SWMU #1** SOLID WASTE MANAGEMENT UNIT LOCATION AND NUMBER
- AOC #1** AREA OF CONCERN LOCATION AND NUMBER

NOTES

1. BASE MAP DEVELOPED FROM A DRAWING "TOPOGRAPHIC MAP", PREPARED BY STS CONSULTANTS LTD., VERNON HILLS, ILLINOIS, PROJECT NO. 86008, DATED APRIL 14, 1999.
2. BEARINGS AND GRID REFERENCED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM - SOUTH ZONE.
3. ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1929. SITE BENCHMARK: NE FLANGE BOLT ON HYDRANT NORTH SIDE OF MARITIME DRIVE. ELEVATION = 703.22.
4. TOPOGRAPHIC MAPPING PREPARED FROM FIELD SURVEYS COMPLETED ON APRIL 7, 1999.
5. HAND AUGERS HA01 AND HA02 WERE COMPLETED ON APRIL 22, 2004 BY MWH.
6. MONITORING WELL MW01 WAS INSTALLED BY WISCONSIN SOIL TESTING WITH THE SUPERVISION OF MWH ON APRIL 22, 2004. MW01 WAS ABANDONED BY MWH ON AUGUST 5, 2004.
7. SEDIMENT SAMPLES SD01 AND SD01a-j WERE COLLECTED BETWEEN APRIL 22 AND AUGUST 5, 2004.

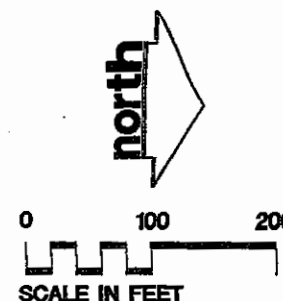
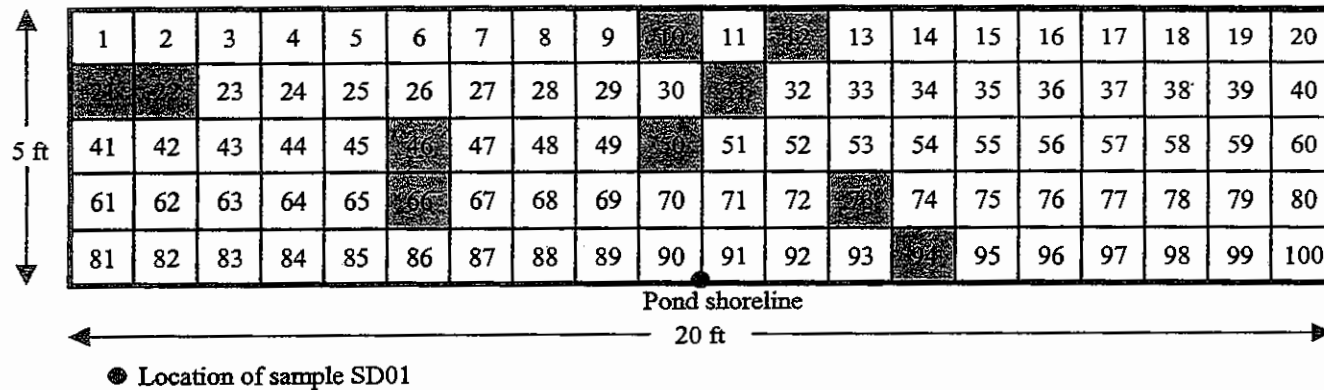


Figure 1
Random Sediment Sampling Grid
Onyx RFI



Highlighted spaces were selected for sampling by the 'RANDBETWEEN' function in Microsoft Excel.

Random grid space selection:

		Cell	Sample
Low	High	selected	No.
1	100	50	SD01a
1	100	66	SD01b
1	100	21	SD01c
1	100	94	SD01d
1	100	12	SD01e
1	100	73	SD01f
1	100	22	SD01g
1	100	31	SD01h
1	100	10	SD01i
1	100	46	SD01j

Figure 1 is a 5x20 grid representing a 5 ft by 20 ft area. The grid is divided into four 5x5 quadrants. The bottom edge is labeled "Pond shoreline". A black dot on the shoreline is labeled "SD01 = 0.67 and 3.2". Shaded cells contain numerical values: (1,1)=0.15, (1,2)=0.15, (1,10)=0.49, (1,12)=0.71, (1,14)=0.47, (2,3)=0.34, (2,4)=0.30, (2,10)=0.55, (3,14)=0.32, (4,16)=0.040. A vertical arrow on the left indicates 5 ft, and a horizontal arrow at the bottom indicates 20 ft.

Notes:

Bold values indicate an exceedence of the Midpoint Effect Concentration (MEC) for Mercury = 0.64 mg/kg

A

**SOIL BORING LOG, TEMPORARY WELL CONSTRUCTION, DEVELOPMENT,
AND ABANDONMENT FORMS**

**MWH**

One Science Court
P.O. Box 5385
Madison, WI 53705
TEL. (608) 231-4747

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (More than 50% of material is larger than No. 200 sieve size.)		
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	Clean Gravels (Less than 5% fines)	
	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	GP	Poorly graded gravels, gravel-sand mixtures, little or no fines
	Gravels with Fines (More than 12% fines)	
	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	Clean Sands (Less than 5% fines)	
	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly graded sands, gravelly sands, little or no fines
	Sands with Fines (More than 12% fines)	
	SM	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)		
SILTS AND CLAYS Liquid limit less than 50%	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils

LABORATORY CLASSIFICATION CRITERIA

$$GW \quad C_u = \frac{D_{60}}{D_{10}} \text{ greater than 4; } C_o = \frac{(D_{30})^2}{D_{10} \times D_{60}} \text{ between 1 and 3}$$

GP Not meeting all gradation requirements for GW

GM Atterberg limits below "A" line or P.I. less than 4

Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols

GC Atterberg limits above "A" line with P.I. greater than 7

$$SW \quad C_u = \frac{D_{60}}{D_{10}} \text{ greater than 6; } C_o = \frac{(D_{30})^2}{D_{10} \times D_{60}} \text{ between 1 and 3}$$

SP Not meeting all gradation requirements for SW

SM Atterberg limits below "A" line or P.I. less than 4

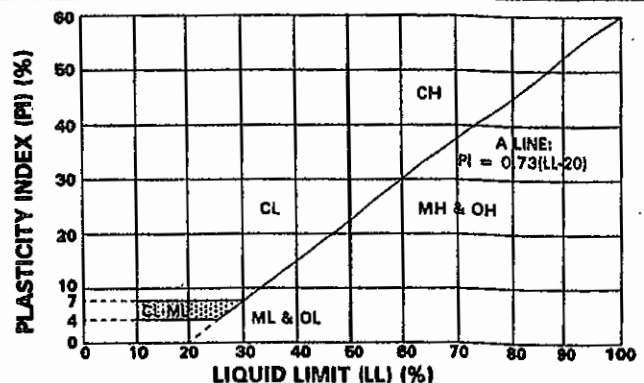
Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.

SC Atterberg limits above "A" line with P.I. greater than 7

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent GW, GP, SW, SP
More than 12 percent GM, GC, SM, SC
5 to 12 percent Borderline cases requiring dual symbols

PLASTICITY CHART



OTHER MATERIAL SYMBOLS

	Topsoil		GS		SM/GM		CL-ML		Crystalline Rock		Dolomite
	Pavement		GC-GM		SC/GC		Claystone		Sandstone		Siltstone
	Fill		GS2		SC-SM		Coal		Limestone		Shale
	Refuse										

See log description for USCS classification of the following soils:
SM/GM & SC/GC - Symbols are used to differentiate SM, GM, SC & GC soils.

GS2 - Symbol used when approximately equal percentages of gravel, sand, silt & clay exist.
GS - Symbol used for GP, GW, SP or SW soils with nearly equal sand and gravel.



Page 1 of

1

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2



STICK-UP MONITORING WELL CONSTRUCTION SUMMARY

JOB NO. 2082678.01160101

Facility/Project Name xyx Special Services	Local Grid Location of Well ft. <input type="checkbox"/> N. <input type="checkbox"/> E. ft. <input type="checkbox"/> S. <input type="checkbox"/> W.	Well Name MW01
Use of Well Water Table Observation Well <input checked="" type="checkbox"/> Piezometer <input type="checkbox"/>	Grid Origin Location Lat. _____ Long. _____ or St. Plane _____ ft. N. _____ ft. E. _____	Date Well Installed 4/22/2004
Distance Well Is From Waste/Source Boundary ft. _____	Section Location of Waste/Source <input type="checkbox"/> E. <input type="checkbox"/> W. Location of Well Relative to Waste/Source <input type="checkbox"/> Upgradient <input type="checkbox"/> Sidegradient <input checked="" type="checkbox"/> Not Known	Well Installed By: (Person's Name and Firm) (Geologist) Rick Joslin (MWH) (Driller) Dan Turley (Wisconsin Soil Testing)

Protective pipe, top elevation _____ ft. MSL Cap and lock? ☒ Yes ☐ NoWell casing top elevation _____ ft. MSL Protective cover pipe:
Inside diameter: 4.0 in.

Land surface elevation _____ ft. MSL Length: 5.0 ft.

Surface seal, bottom _____ ft. MSL or 3.0 ft. Material: Steel ☒
Other ☐USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☒ MH ☐ CL ☒ CH ☐
Bedrock ☐Sieve analysis attached? ☐ Yes ☒ No Additional protection? ☐ Yes ☒ No
If yes, describe: _____Drilling method used: Rotary ☐
Hollow Stem Auger ☒
Other ☐Drilling fluid used: Water ☐ Air ☐
Drilling Mud ☐ None ☒Drilling additives used? ☐ Yes ☒ No

Describe NA

Source of water: NA

Surface seal: Bentonite ☐
Concrete ☒
Other ☐Material between well casing and protective pipe:
Bentonite ☐
Annular space seal ☐
Other ☒Red Flint Filter Sand
Annular space seal: Granular Bentonite ☒
Lbs/gal mud weight... Bentonite-sand slurry ☐
Lbs/gal mud weight... Bentonite slurry ☐
% Bentonite... Bentonite-cement grout ☐
cu ft volume added for any of the aboveHow installed: Tremie ☐
Tremie pumped ☐
Gravity ☒Bentonite seal: ☒ 1/4 in. ☐ 3/8 in. ☐ 1/2 in. Bentonite granules ☒
#8 Granular Bentonite ☐
Bentonite pellets ☐
Other ☐

Fine sand material: Manufacturer, product name & mesh size

None

Volume added NA cu ft

Filter pack material: Manufacturer, product name & mesh size

Red Flint Filter Sand (50lbs/bag)

Volume added _____ cu ft

Well casing: Flush threaded PVC schedule 40 ☒
Flush threaded PVC schedule 80 ☐
Other ☐

Screen material: Sch. 40 PVC

Screen type: Factory cut ☒
Continuous slot ☐
Other ☐

Manufacturer Environmental Products

Slot size: 0.010 in.

Slotted length: 10.0 ft.

Backfill material (below filter pack): None ☒
Other ☐

Bentonite seal, top _____ ft. MSL or 0.0 ft.

Fine sand, top _____ ft. MSL or -- ft.

Filter pack, top _____ ft. MSL or 3.0 ft.

Screen joint, top _____ ft. MSL or 5.0 ft.

Well bottom _____ ft. MSL or 15.0 ft.

Filter pack, bottom _____ ft. MSL or 15.0 ft.

Borehole, bottom _____ ft. MSL or 15.0 ft.

Borehole, diameter 8.3 in.

O.D. well casing 2.38 in.

I.D. well casing 2.06 in.

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm MWH Americas, Inc.

GROUND-WATER/SURFACE WATER SAMPLING FORM

Location Onyx Special Services Surface water ☐ Groundwater ☒ Sample Identification: MW01
(Use: Well name)
Sampling Personnel Rick Joslin Date 5/4/2003 Weather Clear, sunny, slight breeze

MEASUREMENT SUMMARY:

Measuring Point	TOC	Depth to Water	9	Depth to Product	NA	Product Thickness	NA
Total Casing Depth	18.68	Casing Diameter	2-inch	Calculated Purge Volume	NA		mL

SAMPLING SUMMARY:

SAMPLING SUMMARY: Sample Type: Grab ☒ Composite ☐
Sampling Method: Grundfos ☐ Bladder Pump ☐ Peristaltic Pump ☒ Bailer ☐
Pump Started 1010 Pump Stopped 1050 Total 500 mL Organic Vapor at Well Head NA

[illegible]

Final Readings:

Time	pH	SC	Temp	Turb.	Flow Rate	DTW	DO	Redox
1020	6.59	1016	9.9	Clear	100	9.35	NA	NA

HYDROLAB:

HYDROLAB: pH calibration Buffers: 4 7 10 Eh Reference solution
SC Reference solution Turbidity Reference solution NTUs

SAMPLE COLLECTION AND TIME:

Sample Identification: MW01 Time: 1020 MS/MSD ☐ Duplicate ☐
Duplicate Identification: NA Time NA


SAMPLE ANALYSIS:

SAMPLE ANALYSIS: VOCs ☒ SVOCs ☒ TPH ☐ PAHs ☐ TOC ☐
Pest./PCBs ☐ Dioxins/Furans ☐ Dissolved Metals ☒ Total Metals ☐ Chloride, Sulfate ☐
C1-, F-, SO₄- ☐ Carb/Bicarb ☐ NO₃/NO₂ ☐ Phenols ☐ TDS ☐ Dissolved Mercury ☒
Other ☒ List: Dissolved Metals = Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, and Silver



MWH

MONTGOMERY WATSON HARZA

RRJ/r/rj/  MONTGOMERY WATSON HARZA
N:/jobs/208/2678/01/MW01_low flow sampling form

GROUND-WATER/SURFACE WATER SAMPLING FORM

5

All abandonment work shall be performed in accordance with the provisions of Chapters NR 111, NR 112 or NR 141, Wis. Admin. Code, whichever is applicable. Also, see instructions on back.

(1) GENERAL INFORMATION		(2) FACILITY NAME	
Well/Drillhole/Borehole Location	County Ozaukee	Original Well Owner (If Known) Onyx Special Services	
1/4 of SE 1/4 of Sec. 32 ; T 11 N; R. 22 <input checked="" type="checkbox"/> E <input type="checkbox"/> W		Present Well Owner Onyx Special Services	
(If applicable) Gov't Lot _____ Grid Number _____		Street or Route 1275 Mineral Springs drive	
Grid Location _____ ft <input type="checkbox"/> N. <input type="checkbox"/> S., _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> W.		City, State, Zip Code Port Washington	
Civil Town Name		Facility Well No. and/or Name (If Applicable) MW01	WI Unique Well No.
Street Address of Well 1275 Mineral Springs drive		Reason for Abandonment No longer needed	
City, Village Port Washington		Date of Abandonment 8/5/2004	

WELL/DRILLHOLE/BOREHOLE INFORMATION

(3) Original Well/Drillhole/Borehole Construction Completed on (Date) 4/24/2004		(4) Depth to Water (Feet) 9.26	
<input checked="" type="checkbox"/> Monitoring Well <input type="checkbox"/> Water Well <input type="checkbox"/> Drillhole <input type="checkbox"/> Borehole		Pump & Piping Removed? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Applicable Liner(s) Removed? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Applicable Screen Removed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Applicable Casing Left in Place? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If No, Explain _____	
Construction Report Available? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Was Casing Cut Off Below Surface? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Did Sealing Material Rise to Surface? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Did Material Settle After 24 Hours? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, Was Hole Retopped? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Construction Type: <input checked="" type="checkbox"/> Drilled <input type="checkbox"/> Driven (Sandpoint) <input type="checkbox"/> Dug <input type="checkbox"/> Other (Specify) _____		(5) Required Method of Placing Sealing Material	
Formation Type: <input checked="" type="checkbox"/> Unconsolidated Formation <input type="checkbox"/> Bedrock		<input type="checkbox"/> Conductor Pipe-Gravity <input type="checkbox"/> Conductor Pipe-Pumped <input type="checkbox"/> Dump Bailer <input type="checkbox"/> Other (Explain) _____	
Total Well Depth (ft.) 15 Casing Diameter (ins.) 2 (From ground surface) Casing Depth (ft.) 15		(6) Sealing Materials	
Was Well Annular Space Grouted? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown If Yes, To What Depth? 3 Feet		For monitoring wells and monitoring well boreholes only <input type="checkbox"/> Neat Cement Grout <input checked="" type="checkbox"/> Bentonite Pellets <input type="checkbox"/> Sand-Cement (Concrete) Grout <input type="checkbox"/> Granular Bentonite <input type="checkbox"/> Concrete <input type="checkbox"/> Bentonite-Cement Grout <input type="checkbox"/> Clay-Sand Slurry <input type="checkbox"/> Bentonite-Sand Slurry <input type="checkbox"/> Chipped Bentonite	

(7) Sealing Material Used	From (Ft.)	To (Ft.)	No. Yards, Sacks Sealant or Volume	(Circle One)	Mix Ratio or Mud Weight
Bentonite Chips	Surface	15	1		

(8) Comments:

(9) Name of Person or Firm Doing Sealing Work MWH, Inc.		(10) FOR DNR OR COUNTY USE ONLY	
Signature of Person Doing Work <i>B. J. Kapp</i>	Date Signed 8/6/2004	Date Received/Inspected	District/County
Street or Route 1 Science Court	Telephone Number (608) 231-4747	Reviewer/Inspector	<input type="checkbox"/> Complying Work <input type="checkbox"/> Noncomplying Work
City, State, Zip Code Madison, Wisconsin 53711		Follow-up Necessary	

B

LABORATORY ANALYTICAL REPORTS

ANALYTICAL REPORT

1 of 9

MONTGOMERY WATSON HARZA
MARK PAULI
ONE SCIENCE CT
MADISON, WI 53711

Project Name: ONYX SPECIAL SERVICE
Contract #: 1510
Project #: 2082678.01160101
Folder #: 40447
Purchase Order #:
Arrival Temperature: See COC
Receipt Date: 5/10/2004
Date Received: 4/27/2004
Reprint Date:

CTI LAB#	250890	Sample Description:	SD01	Sampled:	4/22/2004 1030
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	73.6	%	N/A	N/A	1			4/27/2004	JHO	EPA 5030A
Metals Results										
Mercury	0.87	mg/kg	0.041	0.12	10		5/1/2004	5/3/2004	NAH	EPA 7471
Organic Results										
Qualifiers applying to all Analytes of Method EPA 8310: V										
1-Methylnaphthalene	<0.12	mg/kg	0.12	0.38	1		4/28/2004	5/5/2004	SHU	EPA 8310
2-Methylnaphthalene	<0.14	mg/kg	0.14	0.44	1		4/28/2004	5/5/2004	SHU	EPA 8310
Acenaphthene	<0.12	mg/kg	0.12	0.38	1		4/28/2004	5/5/2004	SHU	EPA 8310
Acenaphthylene	<0.096	mg/kg	0.096	0.30	1		4/28/2004	5/5/2004	SHU	EPA 8310
Anthracene	<0.014	mg/kg	0.014	0.054	1		4/28/2004	5/5/2004	SHU	EPA 8310
Benzo(a)anthracene	<0.0027	mg/kg	0.0027	0.013	1		4/28/2004	5/5/2004	SHU	EPA 8310
Benzo(a)pyrene	0.15	mg/kg	0.014	0.054	1		4/28/2004	5/5/2004	SHU	EPA 8310
Benzo(b)fluoranthene	0.29	mg/kg	0.0055	0.013	1		4/28/2004	5/5/2004	SHU	EPA 8310
Benzo(g,h,i)perylene	0.14	mg/kg	0.014	0.047	1	P	4/28/2004	5/5/2004	SHU	EPA 8310
Benzo(k)fluoranthene	<0.0055	mg/kg	0.0055	0.013	1		4/28/2004	5/5/2004	SHU	EPA 8310
Chrysene	<0.014	mg/kg	0.014	0.054	1		4/28/2004	5/5/2004	SHU	EPA 8310
Dibenzo(a,h)anthracene	<0.062	mg/kg	0.062	0.21	1		4/28/2004	5/5/2004	SHU	EPA 8310
Fluoranthene	0.14	mg/kg	0.0069	0.020	1	P	4/28/2004	5/5/2004	SHU	EPA 8310
Fluorene	<0.048	mg/kg	0.048	0.18	1		4/28/2004	5/5/2004	SHU	EPA 8310
Indeno(1,2,3-cd)pyrene	0.13	mg/kg	0.014	0.047	1	P	4/28/2004	5/5/2004	SHU	EPA 8310
Naphthalene	<0.12	mg/kg	0.12	0.38	1		4/28/2004	5/5/2004	SHU	EPA 8310
Phenanthrene	<0.014	mg/kg	0.014	0.054	1		4/28/2004	5/5/2004	SHU	EPA 8310
Pyrene	<0.014	mg/kg	0.014	0.054	1		4/28/2004	5/5/2004	SHU	EPA 8310

WI DNR Lab Certification Number: 15-7066030
NATCP Certification Number: 105-000280

Solid sample results reported on a Dry Weight Basis

CTI LAB#:	250890	Sample Description:	SD01	Sampled:	4/22/2004 1030
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
1,1,2-Trichloroethane	<0.016	mg/kg	0.016	0.050	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,1,1,2-Tetrachloroethane	<0.016	mg/kg	0.016	0.054	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,1,1-Trichloroethane	<0.012	mg/kg	0.012	0.042	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,1,2,2-Tetrachloroethane	<0.011	mg/kg	0.011	0.035	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,1-Dichloroethane	<0.018	mg/kg	0.018	0.060	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,1-Dichloroethene	<0.018	mg/kg	0.018	0.057	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,1-Dichloropropene	<0.016	mg/kg	0.018	0.058	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2,3-Trichlorobenzene	<0.018	mg/kg	0.018	0.060	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2,3-Trichloropropane	<0.023	mg/kg	0.023	0.076	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2,4-Trichlorobenzene	<0.015	mg/kg	0.015	0.052	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2,4-Trimethylbenzene	<0.011	mg/kg	0.011	0.037	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2-Dibromo-3-chloropropane	<0.019	mg/kg	0.019	0.063	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2-Dibromoethane	<0.016	mg/kg	0.018	0.061	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2-Dichlorobenzene	<0.0068	mg/kg	0.0068	0.020	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2-Dichloroethane	<0.011	mg/kg	0.011	0.033	1		4/27/2004	4/27/2004	RLD	EPA 8260
cis-1,2-Dichloroethene	<0.015	mg/kg	0.015	0.062	1		4/27/2004	4/27/2004	RLD	EPA 8260
trans-1,2-Dichloroethene	<0.022	mg/kg	0.022	0.072	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2-Dichloropropane	<0.0095	mg/kg	0.0095	0.033	1		4/27/2004	4/27/2004	RLD	EPA 8260
cis-1,3-Dichloropropene	<0.020	mg/kg	0.020	0.086	1		4/27/2004	4/27/2004	RLD	EPA 8260
trans-1,3-Dichloropropene	<0.012	mg/kg	0.012	0.038	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,3,5-Trimethylbenzene	<0.015	mg/kg	0.015	0.049	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,3-Dichlorobenzene	<0.015	mg/kg	0.015	0.046	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,3-Dichloropropane	<0.015	mg/kg	0.015	0.049	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,4-Dichlorobenzene	<0.012	mg/kg	0.012	0.039	1		4/27/2004	4/27/2004	RLD	EPA 8260
2,2-Dichloropropane	<0.014	mg/kg	0.014	0.048	1		4/27/2004	4/27/2004	RLD	EPA 8260
2-Butanone	0.50	mg/kg	0.29	0.92	1		4/27/2004	4/27/2004	RLD	EPA 8260
2-Chlorotoluene	<0.0068	mg/kg	0.0068	0.023	1		4/27/2004	4/27/2004	RLD	EPA 8260
2-Hexanone	<0.26	mg/kg	0.26	0.68	1		4/27/2004	4/27/2004	RLD	EPA 8260
4-Chlorotoluene	<0.014	mg/kg	0.014	0.046	1		4/27/2004	4/27/2004	RLD	EPA 8260
4-Methyl-2-pentanone	<0.16	mg/kg	0.16	0.56	1		4/27/2004	4/27/2004	RLD	EPA 8260
Acetone	<0.41	mg/kg	0.41	1.5	1		4/27/2004	4/27/2004	RLD	EPA 8260
Benzene	<0.0068	mg/kg	0.0068	0.023	1		4/27/2004	4/27/2004	RLD	EPA 8260
Bromobenzene	<0.018	mg/kg	0.018	0.060	1		4/27/2004	4/27/2004	RLD	EPA 8260

CTLAB#: 250890 Sample Description: SD01

Sampled: 4/22/2004 1030

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Bromochloromethane	<0.019	mg/kg	0.019	0.064	1		4/27/2004	4/27/2004	RLD	EPA 8260
Bromodichloromethane	<0.019	mg/kg	0.019	0.064	1		4/27/2004	4/27/2004	RLD	EPA 8260
Bromoform	<0.019	mg/kg	0.019	0.065	1		4/27/2004	4/27/2004	RLD	EPA 8260
Bromomethane	<0.030	mg/kg	0.030	0.10	1		4/27/2004	4/27/2004	RLD	EPA 8260
n-Butylbenzene	<0.011	mg/kg	0.011	0.035	1		4/27/2004	4/27/2004	RLD	EPA 8260
sec-Butylbenzene	<0.0095	mg/kg	0.0095	0.033	1		4/27/2004	4/27/2004	RLD	EPA 8260
tert-Butylbenzene	<0.011	mg/kg	0.011	0.037	1		4/27/2004	4/27/2004	RLD	EPA 8260
Carbon disulfide	<0.039	mg/kg	0.039	0.13	1		4/27/2004	4/27/2004	RLD	EPA 8260
Carbon tetrachloride	<0.012	mg/kg	0.012	0.042	1		4/27/2004	4/27/2004	RLD	EPA 8260
Chlorobenzene	<0.016	mg/kg	0.016	0.056	1		4/27/2004	4/27/2004	RLD	EPA 8260
Chloroethane	<0.022	mg/kg	0.022	0.071	1		4/27/2004	4/27/2004	RLD	EPA 8260
Chloroform	<0.012	mg/kg	0.012	0.039	1		4/27/2004	4/27/2004	RLD	EPA 8260
Chloromethane	<0.015	mg/kg	0.015	0.049	1		4/27/2004	4/27/2004	RLD	EPA 8260
Dibromochloromethane	<0.0082	mg/kg	0.0082	0.029	1		4/27/2004	4/27/2004	RLD	EPA 8260
Dibromomethane	<0.012	mg/kg	0.012	0.039	1		4/27/2004	4/27/2004	RLD	EPA 8260
Dichlorodifluoromethane	<0.018	mg/kg	0.018	0.056	1		4/27/2004	4/27/2004	RLD	EPA 8260
Diisopropyl ether	<0.011	mg/kg	0.011	0.038	1		4/27/2004	4/27/2004	RLD	EPA 8260
Ethylbenzene	<0.0095	mg/kg	0.0095	0.033	1		4/27/2004	4/27/2004	RLD	EPA 8260
Hexachlorobutadiene	<0.018	mg/kg	0.018	0.058	1		4/27/2004	4/27/2004	RLD	EPA 8260
Isopropylbenzene	<0.015	mg/kg	0.015	0.049	1		4/27/2004	4/27/2004	RLD	EPA 8260
p-Isopropyltoluene	<0.018	mg/kg	0.018	0.058	1		4/27/2004	4/27/2004	RLD	EPA 8260
Methyl tert-butyl ether	<0.0082	mg/kg	0.0082	0.024	1		4/27/2004	4/27/2004	RLD	EPA 8260
Methylene chloride	<0.034	mg/kg	0.034	0.11	1		4/27/2004	4/27/2004	RLD	EPA 8260
Naphthalene	<0.018	mg/kg	0.018	0.052	1		4/27/2004	4/27/2004	RLD	EPA 8260
n-Propylbenzene	<0.0068	mg/kg	0.0068	0.022	1		4/27/2004	4/27/2004	RLD	EPA 8260
Styrene	<0.011	mg/kg	0.011	0.034	1		4/27/2004	4/27/2004	RLD	EPA 8260
Tetrachloroethane	<0.018	mg/kg	0.018	0.057	1		4/27/2004	4/27/2004	RLD	EPA 8260
Tetrahydrofuran	<0.22	mg/kg	0.22	0.72	1		4/27/2004	4/27/2004	RLD	EPA 8260
Toluene	<0.0095	mg/kg	0.0095	0.031	1		4/27/2004	4/27/2004	RLD	EPA 8260
Trichloroethene	<0.020	mg/kg	0.020	0.067	1		4/27/2004	4/27/2004	RLD	EPA 8260
Trichlorofluoromethane	<0.014	mg/kg	0.014	0.044	1		4/27/2004	4/27/2004	RLD	EPA 8260
Vinyl acetate	<0.10	mg/kg	0.10	0.35	1		4/27/2004	4/27/2004	RLD	EPA 8260
Vinyl chloride	<0.015	mg/kg	0.015	0.048	1		4/27/2004	4/27/2004	RLD	EPA 8260

CTI LAB#:	250890	Sample Description:	SD01	Sampled:	4/22/2004 1030
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
m & p-Xylene	<0.026	mg/kg	0.026	0.084	1		4/27/2004	4/27/2004	RLD	EPA 8260
o-Xylene	<0.016	mg/kg	0.016	0.056	1		4/27/2004	4/27/2004	RLD	EPA 8260

CTI LAB#:	250891	Sample Description:	MEOH BLANK	Sampled:	4/22/2004 1015
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Organic Results										
1,1,2-Trichloroethane	<0.012	mg/kg	0.012	0.037	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,1,1,2-Tetrachloroethane	<0.012	mg/kg	0.012	0.040	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,1,1-Trichloroethane	<0.0090	mg/kg	0.0090	0.031	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,1,2,2-Tetrachloroethane	<0.0080	mg/kg	0.0080	0.026	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,1-Dichloroethane	<0.013	mg/kg	0.013	0.044	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,1-Dichloroethene	<0.013	mg/kg	0.013	0.042	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,1-Dichloropropene	<0.013	mg/kg	0.013	0.043	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2,3-Trichlorobenzene	<0.013	mg/kg	0.013	0.044	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2,3-Trichloropropane	<0.017	mg/kg	0.017	0.056	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2,4-Trichlorobenzene	<0.011	mg/kg	0.011	0.038	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2,4-Trimethylbenzene	<0.0080	mg/kg	0.0080	0.027	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2-Dibromo-3-chloropropane	<0.014	mg/kg	0.014	0.046	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2-Dibromoethane	<0.013	mg/kg	0.013	0.045	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2-Dichlorobenzene	<0.0050	mg/kg	0.0050	0.015	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2-Dichloroethane	<0.0080	mg/kg	0.0080	0.024	1		4/27/2004	4/27/2004	RLD	EPA 8260
cis-1,2-Dichloroethene	<0.011	mg/kg	0.011	0.038	1		4/27/2004	4/27/2004	RLD	EPA 8260
trans-1,2-Dichloroethene	<0.016	mg/kg	0.016	0.053	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,2-Dichloropropane	<0.0070	mg/kg	0.0070	0.024	1		4/27/2004	4/27/2004	RLD	EPA 8260
cis-1,3-Dichloropropene	<0.015	mg/kg	0.015	0.050	1		4/27/2004	4/27/2004	RLD	EPA 8260
trans-1,3-Dichloropropene	<0.0090	mg/kg	0.0090	0.028	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,3,5-Trimethylbenzene	<0.011	mg/kg	0.011	0.036	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,3-Dichlorobenzene	<0.011	mg/kg	0.011	0.035	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,3-Dichloropropane	<0.011	mg/kg	0.011	0.036	1		4/27/2004	4/27/2004	RLD	EPA 8260
1,4-Dichlorobenzene	<0.0090	mg/kg	0.0090	0.029	1		4/27/2004	4/27/2004	RLD	EPA 8260
2,2-Dichloropropane	<0.010	mg/kg	0.010	0.034	1		4/27/2004	4/27/2004	RLD	EPA 8260
2-Butanone	0.43	mg/kg	0.21	0.66	1		4/27/2004	4/27/2004	RLD	EPA 8260
2-Chlorotoluene	<0.0050	mg/kg	0.0050	0.017	1		4/27/2004	4/27/2004	RLD	EPA 8260

CTILAB#:	250891	Sample Description:	MEOH BLANK	Sampled:	4/22/2004 1015
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
2-Hexanone	<0.19	mg/kg	0.19	0.85	1		4/27/2004	4/27/2004	RLD	EPA 8260
4-Chlorotoluene	<0.010	mg/kg	0.010	0.034	1		4/27/2004	4/27/2004	RLD	EPA 8260
4-Methyl-2-pentanone	<0.12	mg/kg	0.12	0.41	1		4/27/2004	4/27/2004	RLD	EPA 8260
Acetone	<0.30	mg/kg	0.30	1.1	1		4/27/2004	4/27/2004	RLD	EPA 8260
Benzene	<0.0050	mg/kg	0.0050	0.017	1		4/27/2004	4/27/2004	RLD	EPA 8260
Bromobenzene	<0.013	mg/kg	0.013	0.044	1		4/27/2004	4/27/2004	RLD	EPA 8260
Bromochloromethane	<0.014	mg/kg	0.014	0.047	1		4/27/2004	4/27/2004	RLD	EPA 8260
Bromodichloromethane	<0.014	mg/kg	0.014	0.047	1		4/27/2004	4/27/2004	RLD	EPA 8260
Bromoform	<0.014	mg/kg	0.014	0.048	1		4/27/2004	4/27/2004	RLD	EPA 8260
Bromomethane	<0.022	mg/kg	0.022	0.075	1		4/27/2004	4/27/2004	RLD	EPA 8260
n-Butylbenzene	<0.0080	mg/kg	0.0080	0.026	1		4/27/2004	4/27/2004	RLD	EPA 8260
sec-Butylbenzene	<0.0070	mg/kg	0.0070	0.024	1		4/27/2004	4/27/2004	RLD	EPA 8260
tert-Butylbenzene	<0.0080	mg/kg	0.0080	0.027	1		4/27/2004	4/27/2004	RLD	EPA 8260
Carbon disulfide	<0.029	mg/kg	0.029	0.098	1		4/27/2004	4/27/2004	RLD	EPA 8260
Carbon tetrachloride	<0.0090	mg/kg	0.0090	0.031	1		4/27/2004	4/27/2004	RLD	EPA 8260
Chlorobenzene	<0.012	mg/kg	0.012	0.041	1		4/27/2004	4/27/2004	RLD	EPA 8260
Chloroethane	<0.016	mg/kg	0.016	0.052	1		4/27/2004	4/27/2004	RLD	EPA 8260
Chloroform	<0.0090	mg/kg	0.0090	0.029	1		4/27/2004	4/27/2004	RLD	EPA 8260
Chloromethane	<0.011	mg/kg	0.011	0.036	1		4/27/2004	4/27/2004	RLD	EPA 8260
Dibromochloromethane	<0.0060	mg/kg	0.0060	0.021	1		4/27/2004	4/27/2004	RLD	EPA 8260
Dibromomethane	<0.0090	mg/kg	0.0090	0.029	1		4/27/2004	4/27/2004	RLD	EPA 8260
Dichlorodifluoromethane	<0.013	mg/kg	0.013	0.041	1		4/27/2004	4/27/2004	RLD	EPA 8260
Diisopropyl ether	<0.0080	mg/kg	0.0080	0.028	1		4/27/2004	4/27/2004	RLD	EPA 8260
Ethylbenzene	<0.0070	mg/kg	0.0070	0.024	1		4/27/2004	4/27/2004	RLD	EPA 8260
Hexachlorobutadiene	<0.013	mg/kg	0.013	0.043	1		4/27/2004	4/27/2004	RLD	EPA 8260
Isopropylbenzene	<0.011	mg/kg	0.011	0.036	1		4/27/2004	4/27/2004	RLD	EPA 8260
p-Isopropyltoluene	<0.013	mg/kg	0.013	0.043	1		4/27/2004	4/27/2004	RLD	EPA 8260
Methyl tert-butyl ether	<0.0060	mg/kg	0.0060	0.018	1		4/27/2004	4/27/2004	RLD	EPA 8260
Methylene chloride	<0.025	mg/kg	0.025	0.081	1		4/27/2004	4/27/2004	RLD	EPA 8260
Naphthalene	<0.012	mg/kg	0.012	0.038	1		4/27/2004	4/27/2004	RLD	EPA 8260
n-Propylbenzene	<0.0050	mg/kg	0.0050	0.018	1		4/27/2004	4/27/2004	RLD	EPA 8260
Styrene	<0.0080	mg/kg	0.0080	0.025	1		4/27/2004	4/27/2004	RLD	EPA 8260
Tetrachloroethene	<0.013	mg/kg	0.013	0.042	1		4/27/2004	4/27/2004	RLD	EPA 8260

CTI LAB#:	250891	Sample Description:	MEOH BLANK	Sampled:	4/22/2004 1015
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Tetrahydrofuran	<0.16	mg/kg	0.16	0.53	1		4/27/2004	4/27/2004	RLD	EPA 8260
Toluene	<0.0070	mg/kg	0.0070	0.023	1		4/27/2004	4/27/2004	RLD	EPA 8260
Trichloroethene	<0.015	mg/kg	0.015	0.049	1		4/27/2004	4/27/2004	RLD	EPA 8260
Trichlorofluoromethane	<0.010	mg/kg	0.010	0.032	1		4/27/2004	4/27/2004	RLD	EPA 8260
Vinyl acetate	<0.077	mg/kg	0.077	0.26	1		4/27/2004	4/27/2004	RLD	EPA 8260
Vinyl chloride	<0.011	mg/kg	0.011	0.035	1		4/27/2004	4/27/2004	RLD	EPA 8260
m & p-Xylene	<0.019	mg/kg	0.019	0.062	1		4/27/2004	4/27/2004	RLD	EPA 8260
o-Xylene	<0.012	mg/kg	0.012	0.041	1		4/27/2004	4/27/2004	RLD	EPA 8260

CTI LAB#:	250892	Sample Description:	HA01(0-0.5 FT)	Sampled:	4/22/2004 1115
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	79.7	%	N/A	N/A	1			4/27/2004	JHO	EPA 5030A
Metals Results										
Mercury	2.1	mg/kg	0.035	0.10	10		5/1/2004	5/3/2004	NAH	EPA 7471

CTI LAB#:	250893	Sample Description:	HA01(0-0.5 FT) DUP	Sampled:	4/22/2004 1115
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	82.2	%	N/A	N/A	1			4/27/2004	JHO	EPA 5030A
Metals Results										
Mercury	3.8	mg/kg	0.068	0.20	20		5/1/2004	5/3/2004	NAH	EPA 7471

CTI LAB#:	250894	Sample Description:	HA02(0-0.5 FT)	Sampled:	4/22/2004 1135
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	83.5	%	N/A	N/A	1			4/27/2004	JHO	EPA 5030A
Metals Results										
Mercury	0.026	mg/kg	0.0035	0.010	1		5/1/2004	5/3/2004	NAH	EPA 7471

CTI LAB#:	250895	Sample Description:	MW01(0-1.0 FT)	Sampled:	4/22/2004 0840
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	89.3	%	N/A	N/A	1			4/27/2004	JHO	EPA 5030A
Metals Results										

CTI LAB#:	250895	Sample Description:	MW01(0-1.0 FT)	Sampled:	4/22/2004 0840
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Arsenic	17.5	mg/kg	1.9	6.5	1		4/27/2004	4/27/2004	NAH	EPA 6010B
Barium	68.6	mg/kg	0.30	0.98	1		4/27/2004	4/27/2004	NAH	EPA 6010B
Cadmium	0.26	mg/kg	0.077	0.25	1		4/27/2004	4/27/2004	NAH	EPA 6010B
Chromium	11.7	mg/kg	0.31	1.0	1		4/27/2004	4/27/2004	NAH	EPA 6010B
Lead	5.6	mg/kg	0.32	1.1	1		4/27/2004	4/27/2004	NAH	EPA 6010B
Selenium	<0.70	mg/kg	0.70	2.4	1		4/27/2004	4/27/2004	NAH	EPA 6010B
Silver	<0.23	mg/kg	0.23	0.75	1		4/27/2004	4/27/2004	NAH	EPA 6010B
Mercury	0.017	mg/kg	0.0033	0.0099	1		5/1/2004	5/3/2004	NAH	EPA 7471
Organic Results										
1-Methylnaphthalene	<0.019	mg/kg	0.019	0.063	1		4/28/2004	5/5/2004	SHU	EPA 8310
2-Methylnaphthalene	<0.023	mg/kg	0.023	0.073	1		4/28/2004	5/5/2004	SHU	EPA 8310
Acenaphthene	<0.019	mg/kg	0.019	0.063	1		4/28/2004	5/5/2004	SHU	EPA 8310
Acenaphthylene	<0.016	mg/kg	0.016	0.050	1		4/28/2004	5/5/2004	SHU	EPA 8310
Anthracene	0.0037	mg/kg	0.0023	0.0089	1	P	4/28/2004	5/5/2004	SHU	EPA 8310
Benzo(a)anthracene	0.017	mg/kg	0.00045	0.0022	1		4/28/2004	5/5/2004	SHU	EPA 8310
Benzo(a)pyrene	0.027	mg/kg	0.0023	0.0089	1		4/28/2004	5/5/2004	SHU	EPA 8310
Benzo(b)fluoranthene	0.054	mg/kg	0.00090	0.0022	1		4/28/2004	5/5/2004	SHU	EPA 8310
Benzo(g,h,i)perylene	0.028	mg/kg	0.0023	0.0078	1		4/28/2004	5/5/2004	SHU	EPA 8310
Benzo(k)fluoranthene	0.012	mg/kg	0.00090	0.0022	1		4/28/2004	5/5/2004	SHU	EPA 8310
Chrysene	<0.0023	mg/kg	0.0023	0.0089	1		4/28/2004	5/5/2004	SHU	EPA 8310
Dibenzo(a,h)anthracene	<0.010	mg/kg	0.010	0.034	1		4/28/2004	5/5/2004	SHU	EPA 8310
Fluoranthene	0.040	mg/kg	0.0011	0.0033	1		4/28/2004	5/5/2004	SHU	EPA 8310
Fluorene	<0.0079	mg/kg	0.0079	0.027	1		4/28/2004	5/5/2004	SHU	EPA 8310
Indeno(1,2,3-cd)pyrene	0.025	mg/kg	0.0023	0.0078	1	P	4/28/2004	5/5/2004	SHU	EPA 8310
Naphthalene	<0.019	mg/kg	0.019	0.082	1		4/28/2004	5/5/2004	SHU	EPA 8310
Phenanthrene	0.016	mg/kg	0.0023	0.0089	1	B	4/28/2004	5/5/2004	SHU	EPA 8310
Pyrene	<0.0023	mg/kg	0.0023	0.0089	1		4/28/2004	5/5/2004	SHU	EPA 8310

CTI LAB#:	250896	Sample Description:	MW01(4.0-5.0 FT)	Sampled:	4/22/2004 0850
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	84.8	%	N/A	N/A	1			4/27/2004	JHO	EPA 5030A
Metals Results										
Arsenic	11.8	mg/kg	1.9	6.5	1		4/27/2004	4/27/2004	NAH	EPA 6010B

CTI LAB#:	250896	Sample Description:	MW01(4.0-5.0FT)	Sampled:	4/22/2004 0850
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Barium	84.6	mg/kg	0.30	0.98	1		4/27/2004	4/27/2004	NAH	EPA 6010B
Cadmium	0.28	mg/kg	0.076	0.25	1		4/27/2004	4/27/2004	NAH	EPA 6010B
Chromium	17.4	mg/kg	0.31	1.0	1		4/27/2004	4/27/2004	NAH	EPA 6010B
Lead	5.9	mg/kg	0.32	1.1	1		4/27/2004	4/27/2004	NAH	EPA 6010B
Selenium	<0.69	mg/kg	0.69	2.4	1		4/27/2004	4/27/2004	NAH	EPA 6010B
Silver	<0.23	mg/kg	0.23	0.75	1		4/27/2004	4/27/2004	NAH	EPA 6010B
Mercury	0.015	mg/kg	0.0035	0.010	1		5/1/2004	5/3/2004	NAH	EPA 7471
Organic Results										
1-Methylnaphthalene	<0.020	mg/kg	0.020	0.067	1		4/28/2004	5/4/2004	SHU	EPA 8310
2-Methylnaphthalene	<0.024	mg/kg	0.024	0.077	1		4/28/2004	5/4/2004	SHU	EPA 8310
Acenaphthene	<0.020	mg/kg	0.020	0.067	1		4/28/2004	5/4/2004	SHU	EPA 8310
Acenaphthylene	<0.017	mg/kg	0.017	0.053	1		4/28/2004	5/4/2004	SHU	EPA 8310
Anthracene	<0.0024	mg/kg	0.0024	0.0094	1		4/28/2004	5/4/2004	SHU	EPA 8310
Benzo(a)anthracene	<0.00048	mg/kg	0.00048	0.0023	1		4/28/2004	5/4/2004	SHU	EPA 8310
Benzo(a)pyrene	<0.0024	mg/kg	0.0024	0.0094	1		4/28/2004	5/4/2004	SHU	EPA 8310
Benzo(b)fluoranthene	0.0070	mg/kg	0.00096	0.0023	1		4/28/2004	5/4/2004	SHU	EPA 8310
Benzo(g,h,i)perylene	0.0090	mg/kg	0.0024	0.0082	1		4/28/2004	5/4/2004	SHU	EPA 8310
Benzo(k)fluoranthene	0.0070	mg/kg	0.00096	0.0023	1	P	4/28/2004	5/4/2004	SHU	EPA 8310
Chrysene	<0.0024	mg/kg	0.0024	0.0094	1		4/28/2004	5/4/2004	SHU	EPA 8310
Dibenzo(a,h)anthracene	<0.011	mg/kg	0.011	0.036	1		4/28/2004	5/4/2004	SHU	EPA 8310
Fluoranthene	0.0059	mg/kg	0.0012	0.0035	1	P	4/28/2004	5/4/2004	SHU	EPA 8310
Fluorene	<0.0084	mg/kg	0.0084	0.028	1		4/28/2004	5/4/2004	SHU	EPA 8310
Indeno(1,2,3-cd)pyrene	<0.0024	mg/kg	0.0024	0.0082	1		4/28/2004	5/4/2004	SHU	EPA 8310
Naphthalene	<0.020	mg/kg	0.020	0.066	1		4/28/2004	5/4/2004	SHU	EPA 8310
Phenanthrene	<0.0024	mg/kg	0.0024	0.0094	1		4/28/2004	5/4/2004	SHU	EPA 8310
Pyrene	<0.0024	mg/kg	0.0024	0.0094	1		4/28/2004	5/4/2004	SHU	EPA 8310

Notes: * Indicates Value in between LOD and LOQ.

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without written approval of this laboratory. The Chain of Custody is attached.

Submitted by: PM

Record Reviewer

QC Qualifiers

Code	Description
A	Analyte averaged calibration criteria within acceptable limits.
B	Analyte detected in associated Method Blank.
C	Toxicity present in BOD sample.
D	Diluted Out.
E	Safe, No Total Coliform detected.
F	Unsafe, Total Coliform detected, no E. Coll detected.
G	Unsafe, Total Coliform detected and E. Coll detected.
H	Holding time exceeded.
J	Estimated value.
L	Significant peaks were detected outside the chromatographic window.
M	Matrix spike and/or Matrix Spike Duplicate recovery outside acceptance limits.
N	Insufficient BOD oxygen depletion.
O	Complete BOD oxygen depletion.
P	Concentration of analyte differs more than 40% between primary and confirmation analysis.
Q	Laboratory Control Sample outside acceptance limits.
R	See Narrative at end of report.
S	Surrogate standard recovery outside acceptance limits due to apparent matrix effects.
T	Sample received with improper preservation or temperature.
V	Raised Quantitation or Reporting Limit due to limited sample amount or dilution for matrix background interference.
W	Sample amount received was below program minimum.
X	Analyte exceeded calibration range.
Y	Replicate/Duplicate precision outside acceptance limits.
Z	Calibration criteria exceeded.

* See Special Instructions *

1 OF 1

40447



MWH
MONTGOMERY WATSON HARZA

CHAIN OF CUSTODY RECORD

SPECIAL INSTRUCTIONS:

- ☐ PECFA
☐ WILUST
☐ ACT 307
☐ REPORT DRY WT
☐ OTHER

TURNAROUND

- ☒ 2 WEEKS (standard)
☐ 1 WEEK
☐ 3 DAYS
☐ 1 DAY

PROJECT NAME: <u>Onyx Special Services</u>			PROJECT #: <u>2082678.011(6010)</u>		
CITY: <u>Dart Washington</u>			STATE: <u>WI</u>		
SAMPLER(S): <u>Rick Joslin</u>					
COLLECTION DATE	COLLECTION TIME	GRAB / COMP	SAMPLE ID	NO. OF CONTAINERS	ANALYSIS
4/22/04	1030	G	SDR1	5	X X X
	1015	G	MeOH Blank	1	X
	1115	C	HAR1(0-0.5FE)	2	X
	1115	C	HAR1(0-0.5FE) Dup	1	X
	1135	C	HAR2(0-0.5FE)	2	X
	840	C	MWR1(0-1.0FE)	2	X X X
X	X	X	X	X	X X X
4/22/04	1120	C	HAR1(0.5-1.0FE)	2	X
	1140	C	HAR2(0.5-1.0FE)	2	X
	850	C	MWR1(4.0-5.0FE)	2	X X X

ANALYSIS: Metals (7471A)
PAHs (8310)
VOCs (8260)
TRCRA Metals (6010)

Folder #: 40447
Company: MONTGOMERY WATS
Project: ONYX SPECIAL SERVIC
Logged By: JLW PM: PMI

REMARKS: Sail 250890
— 250891
Sail 250892
Sail 250893
Sail 250894
Sail 250895
Hold (2) Sail
Hold (2) Sail
Hold (2) Sail 250896

SPECIAL INSTRUCTIONS: ① TRCRA Metals → arsenic, barium, cadmium, chromium, lead, selenium, and silver
② Hold Samples until MWH instructs to analyze them

TAMPER EVIDENT SEAL INTACT? YES NO NOT PRESENT
SEAL NO.:
SAMPLES RECEIVED ON ICE? X YES NO TEMP: 0.1 °C 4/22/04 1000 ghw 1176

PROJ. MGR.: Leo Lindemanstons

SIGNATURE	DATE	TIME	SIGNATURE	DATE	TIME
RELINQUISHED BY: <u>Richard Joslin</u>	<u>4/22/04</u>	<u>900</u>	RECEIVED BY:		
RELINQUISHED BY:			RECEIVED BY:		
RELINQUISHED BY:			RECEIVED BY:		
RELINQUISHED BY:			RECEIVED FOR LABORATORY BY: <u>[Signature]</u>	<u>4/22/04</u>	<u>102</u>

C-O-C No. 23573

NAME OF COURIER: _____

AIRBILL NUMBER: _____

10-end

ANALYTICAL REPORT

1 of 1

MONTGOMERY WATSON HARZA
MARK PAULI
ONE SCIENCE CT
MADISON, WI 53711

Project Name: ONYX SPECIAL SERVICE
Contract #: 1510
Project #: 2082678.01180101
Folder #: 40663
Purchase Order #:
Arrival Temperature: See COC
Remmit Date: 5/17/2004
Date Received: 5/10/2004
Reprint Date:

CTI LAB#:	252770	Sample Description:	HA01(0.5-1.0FT)	Sampled:	4/22/2004 1120
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	74.4	%	N/A	N/A	1			5/11/2004	GCE	EPA 5030A
Metals Results										
Mercury	0.25	mg/kg	0.0039	0.012	1		5/15/2004	5/17/2004	NAH	EPA 7471

Notes: * Indicates Value in between LOD and LOQ.

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without written approval of this laboratory. The Chain of Custody is attached.

Submitted by: PML

Record Reviewer

* See special instructions * 1 OF 1



MWH
MONTGOMERY WATSON HARZA

CHAIN OF CUSTODY RECORD

40447

SPECIAL INSTRUCTIONS:

- ☐ PECFA
☐ WILUST
☐ ACT 307
☐ REPORT DRY WT
☒ OTHER:

TURNAROUND

- ☒ 2 WEEKS (standard)
☐ 1 WEEK
☐ 3 DAYS
☐ 1 DAY

PROJECT NAME: <u>Onyx Special Services</u>			PROJECT #: <u>2082678-011(0010)</u>		
CITY: <u>Dart Washington</u>			STATE: <u>WI</u>		
SAMPLER(S): <u>Rick Joslin</u>					
COLLECTION DATE	COLLECTION TIME	GRAB / COMP	SAMPLE ID		NO. OF CONTAINERS
4/22/04	1030	G	SD01		5
	1015	G	MEOH Blank		1
	1115	C	HA01(0-0.5FE)		2
	1115	C	HA01(0-0.5FE) Dup		1
	1135	C	HA02(0-0.5FE)		2
	840	C	MW01(0-1.0FE)		2
X	X	X	X		X
4/22/04	1120	C	HA01(0.5-1.0FE)		2
	1140	C	HA02(0.5-1.0FE)		2
	850	C	MW01(4.0-5.0FE)		2

Mercury (7471A)
PAHs (8310)
VOCs (8260)
TRCRA Metals (6010)

Folder #: 40447
Company: MONTGOMERY WATS
Project: ONYX SPECIAL SERVIC
Logged By: JLW PM: PMI

REMARKS: Soil 250890, Soil 250891, Soil 250892, Soil 250893, Soil 250894, Soil 250895, Hold (2) Soil 252710, Hold (2) Soil 250896

SPECIAL INSTRUCTIONS:

TAMPER EVIDENT SEAL INTACT? ☐ YES ☐ NO ☐ NOT PRESENT

SEAL NO.:

SAMPLES RECEIVED ON ICE? ☒ YES ☐ NO TEMP: 0.1 °C

PROJ. MGR.:

LCO Linnemanstons

① TRCRA Metals → arsenic, barium, cadmium, chromium, lead, selenium, and silver

② Hold samples until MWH instructs to analyze them

SIGNATURE	DATE	TIME	SIGNATURE	DATE	TIME
RELINQUISHED BY: <u>Richard Joslin</u>	4/22/04	900	RECEIVED BY:		
RELINQUISHED BY:			RECEIVED BY:		
RELINQUISHED BY:			RECEIVED BY:		
RELINQUISHED BY:			RECEIVED FOR LABORATORY BY: <u>[Signature]</u>	4/22/04	1176

C-O-C No. 23573

Folder #: 40663

Company: MONTGOMERY WATS

Project: ONYX SPECIAL SERVIC

Logged By: JLW PM: PMI

NAME OF COURIER:

AIRBILL NUMBER:

2-ent

ANALYTICAL REPORT

1 of 8

MONTGOMERY WATSON HARZA
MARK PAULI
ONE SCIENCE CT
MADISON, WI 53711

Project Name: ONYX SPECIAL SERVICE
Contract #: 1510
Project #: 2082678.01160101
Folder #: 40569
Purchase Order #:
Arrival Temperature: See COC
Removal Date: 5/20/2004
Date Received: 5/5/2004
Reprint Date:

CTI LAB#:	252096	Sample Description:	TRIP BLANK	Sampled:	5/4/2004	0645
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Organic Results										
1,1,2-Trichloroethane	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
1,1,1,2-Tetrachloroethane	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260
1,1,1-Trichloroethane	<0.50	ug/L	0.50	1.6	1			5/7/2004	GRB	EPA 8260
1,1,2,2-Tetrachloroethane	<0.15	ug/L	0.15	0.52	1			5/7/2004	GRB	EPA 8260
1,1-Dichloroethane	<0.50	ug/L	0.50	1.7	1			5/7/2004	GRB	EPA 8260
1,1-Dichloroethene	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260
1,1-Dichloropropene	<0.29	ug/L	0.29	0.97	1			5/7/2004	GRB	EPA 8260
1,2,3-Trichlorobenzene	<0.40	ug/L	0.40	1.5	1			5/7/2004	GRB	EPA 8260
1,2,3-Trichloropropane	<0.40	ug/L	0.40	1.4	1			5/7/2004	GRB	EPA 8260
1,2,4-Trichlorobenzene	<0.50	ug/L	0.50	1.8	1			5/7/2004	GRB	EPA 8260
1,2,4-Trimethylbenzene	<0.40	ug/L	0.40	1.3	1			5/7/2004	GRB	EPA 8260
1,2-Dibromo-3-chloropropane	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
1,2-Dibromoethane	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
1,2-Dichlorobenzene	<0.27	ug/L	0.27	0.89	1			5/7/2004	GRB	EPA 8260
1,2-Dichloroethane	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
cis-1,2-Dichloroethene	<0.25	ug/L	0.25	0.83	1			5/7/2004	GRB	EPA 8260
trans-1,2-Dichloroethene	<0.50	ug/L	0.50	1.6	1			5/7/2004	GRB	EPA 8260
1,2-Dichloropropane	<0.23	ug/L	0.23	0.76	1			5/7/2004	GRB	EPA 8260
cis-1,3-Dichloropropene	<0.12	ug/L	0.12	0.42	1			5/7/2004	GRB	EPA 8260
trans-1,3-Dichloropropene	<0.14	ug/L	0.14	0.48	1			5/7/2004	GRB	EPA 8260
1,3,5-Trimethylbenzene	<0.30	ug/L	0.30	1.1	1			5/7/2004	GRB	EPA 8260
1,3-Dichlorobenzene	<0.30	ug/L	0.30	1.1	1			5/7/2004	GRB	EPA 8260
1,3-Dichloropropane	<0.16	ug/L	0.16	0.55	1			5/7/2004	GRB	EPA 8260

WI DNR Lab Certification Number: 15-7066030
NATCP Certification Number: 105JUN2004

Solid sample results reported on a Dry Weight Basis

CTI LAB#:	252086	Sample Description:	TRIP BLANK	Sampled:	5/4/2004 0645
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
1,4-Dichlorobenzene	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260
2,2-Dichloropropane	<0.40	ug/L	0.40	1.4	1			5/7/2004	GRB	EPA 8260
2-Butanone	<5.0	ug/L	5.0	15	1			5/7/2004	GRB	EPA 8260
2-Chlorotoluene	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
2-Hexanone	<4.0	ug/L	4.0	12	1			5/7/2004	GRB	EPA 8260
4-Chlorotoluene	<0.30	ug/L	0.30	1.1	1			5/7/2004	GRB	EPA 8260
4-Methyl-2-pentanone	<4.0	ug/L	4.0	14	1			5/7/2004	GRB	EPA 8260
Acetone	10	ug/L	5.0 *	17	1			5/7/2004	GRB	EPA 8260
Benzene	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
Bromobenzene	<0.26	ug/L	0.26	0.85	1			5/7/2004	GRB	EPA 8260
Bromochloromethane	<0.40	ug/L	0.40	1.3	1			5/7/2004	GRB	EPA 8260
Bromodichloromethane	<0.13	ug/L	0.13	0.42	1			5/7/2004	GRB	EPA 8260
Bromoform	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260
Bromomethane	<0.50	ug/L	0.50	1.8	1			5/7/2004	GRB	EPA 8260
n-Butylbenzene	<0.30	ug/L	0.30	1.1	1			5/7/2004	GRB	EPA 8260
sec-Butylbenzene	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
tert-Butylbenzene	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260
Carbon disulfide	<0.50	ug/L	0.50	1.8	1			5/7/2004	GRB	EPA 8260
Carbon tetrachloride	<0.40	ug/L	0.40	1.4	1			5/7/2004	GRB	EPA 8260
Chlorobenzene	<0.29	ug/L	0.29	0.97	1			5/7/2004	GRB	EPA 8260
Chloroethane	<0.50	ug/L	0.50	1.7	1			5/7/2004	GRB	EPA 8260
Chloroform	<0.25	ug/L	0.25	0.82	1			5/7/2004	GRB	EPA 8260
Chloromethane	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260
Dibromochloromethane	<0.28	ug/L	0.28	0.95	1			5/7/2004	GRB	EPA 8260
Dibromomethane	<0.30	ug/L	0.30	1.1	1			5/7/2004	GRB	EPA 8260
Dichlorodifluoromethane	<0.40	ug/L	0.40	1.4	1			5/7/2004	GRB	EPA 8260
Diisopropyl ether	<0.30	ug/L	0.30	1.2	1			5/7/2004	GRB	EPA 8260
Ethylbenzene	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260
Hexachlorobutadiene	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
Isopropylbenzene	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
p-Isopropyltoluene	<0.40	ug/L	0.40	1.5	1			5/7/2004	GRB	EPA 8260
Methyl tert-butyl ether	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260
Methylene chloride	<0.50	ug/L	0.50	1.8	1			5/7/2004	GRB	EPA 8260

CTI LAB#:	252096	Sample Description:	TRIP BLANK	Sampled:	5/4/2004	0645
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Naphthalene	<0.50	ug/L	0.50	1.5	1			5/7/2004	GRB	EPA 8260
n-Propylbenzene	<0.30	ug/L	0.30	1.1	1			5/7/2004	GRB	EPA 8260
Styrene	<0.30	ug/L	0.30	1.1	1			5/7/2004	GRB	EPA 8260
Tetrachloroethene	<0.40	ug/L	0.40	1.4	1			5/7/2004	GRB	EPA 8260
Tetrahydrofuran	<5.0	ug/L	5.0	17	1			5/7/2004	GRB	EPA 8260
Toluene	<0.40	ug/L	0.40	1.3	1			5/7/2004	GRB	EPA 8260
Trichloroethene	<0.15	ug/L	0.15	0.50	1			5/7/2004	GRB	EPA 8260
Trichlorofluoromethane	<0.50	ug/L	0.50	1.6	1			5/7/2004	GRB	EPA 8260
Vinyl acetate	<1.0	ug/L	1.0	3.3	1			5/7/2004	GRB	EPA 8260
Vinyl chloride	<0.12	ug/L	0.12	0.39	1			5/7/2004	GRB	EPA 8260
m & p-Xylene	<0.70	ug/L	0.70	2.5	1			5/7/2004	GRB	EPA 8260
o-Xylene	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260

CTI LAB#:	252097	Sample Description:	MW01	Sampled:	5/4/2004	1020
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Metals Results										
Dissolved Arsenic	0.87	ug/L	0.77 *	2.57	1		5/6/2004	5/6/2004	GCE	EPA 7060
Dissolved Barium	455	ug/L	1.4	4.5	1			5/10/2004	NAH	EPA 6010B
Dissolved Cadmium	<0.88	ug/L	0.88	2.9	1			5/10/2004	NAH	EPA 6010B
Dissolved Chromium	<4.1	ug/L	4.1	14	1			5/10/2004	NAH	EPA 6010B
Dissolved Lead	<2.8	ug/L	2.8	9.4	1			5/10/2004	NAH	EPA 6010B
Dissolved Selenium	24.3	ug/L	5.1	17	1			5/10/2004	NAH	EPA 6010B
Dissolved Silver	<2.7	ug/L	2.7	9.1	1			5/10/2004	NAH	EPA 6010B
Dissolved Mercury	<0.11	ug/L	0.11	0.35	1		5/8/2004	5/10/2004	NAH	EPA 7470
Organic Results										
1,2,4,5-Tetrachlorobenzene	<0.23	ug/L	0.23	0.77	1		5/11/2004	5/17/2004	JJY	EPA 8270
1,2,4-Trichlorobenzene	<0.24	ug/L	0.24	0.79	1		5/11/2004	5/17/2004	JJY	EPA 8270
1,2-Dichlorobenzene	<0.27	ug/L	0.27	0.92	1		5/11/2004	5/17/2004	JJY	EPA 8270
1,3-Dichlorobenzene	<0.26	ug/L	0.26	0.85	1		5/11/2004	5/17/2004	JJY	EPA 8270
1,4-Dichlorobenzene	<0.24	ug/L	0.24	0.79	1		5/11/2004	5/17/2004	JJY	EPA 8270
2,4,5-Trichlorophenol	<0.35	ug/L	0.35	1.2	1		5/11/2004	5/17/2004	JJY	EPA 8270
2,4,6-Trichlorophenol	<0.42	ug/L	0.42	1.4	1		5/11/2004	5/17/2004	JJY	EPA 8270
2,4-Dichlorophenol	<0.35	ug/L	0.35	1.2	1		5/11/2004	5/17/2004	JJY	EPA 8270

CTI LAB#:	252097	Sample Description:	MW01	Sampled:	5/4/2004 1020
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
2,4-Dimethylphenol	<0.29	ug/L	0.29	0.97	1		5/11/2004	5/17/2004	JJY	EPA 8270
2,4-Dinitrophenol	<4.4	ug/L	4.4	15	1		5/11/2004	5/17/2004	JJY	EPA 8270
2,4-Dinitrotoluene	<0.43	ug/L	0.43	1.4	1		5/11/2004	5/17/2004	JJY	EPA 8270
2,6-Dichlorophenol	<0.44	ug/L	0.44	1.5	1		5/11/2004	5/17/2004	JJY	EPA 8270
2,6-Dinitrotoluene	<0.37	ug/L	0.37	1.2	1		5/11/2004	5/17/2004	JJY	EPA 8270
2-Chloronaphthalene	<0.23	ug/L	0.23	0.75	1		5/11/2004	5/17/2004	JJY	EPA 8270
2-Chlorophenol	<0.35	ug/L	0.35	1.2	1		5/11/2004	5/17/2004	JJY	EPA 8270
2-Methylnaphthalene	<0.22	ug/L	0.22	0.72	1		5/11/2004	5/17/2004	JJY	EPA 8270
2-Methylphenol	<0.25	ug/L	0.25	0.84	1		5/11/2004	5/17/2004	JJY	EPA 8270
2-Nitroaniline	<0.37	ug/L	0.37	1.2	1		5/11/2004	5/17/2004	JJY	EPA 8270
2-Nitrophenol	<0.42	ug/L	0.42	1.4	1		5/11/2004	5/17/2004	JJY	EPA 8270
3 & 4-Methylphenol	<0.38	ug/L	0.38	1.3	1		5/11/2004	5/17/2004	JJY	EPA 8270
3,3'-Dichlorobenzidine	<0.29	ug/L	0.29	0.97	1		5/11/2004	5/17/2004	JJY	EPA 8270
3-Nitroaniline	<0.37	ug/L	0.37	1.2	1		5/11/2004	5/17/2004	JJY	EPA 8270
4,6-Dinitro-2-methylphenol	<2.2	ug/L	2.2	7.3	1		5/11/2004	5/17/2004	JJY	EPA 8270
4-Bromophenyl-phenyl ether	<0.20	ug/L	0.20	0.68	1		5/11/2004	5/17/2004	JJY	EPA 8270
4-Chloro-3-methylphenol	<0.30	ug/L	0.30	0.99	1		5/11/2004	5/17/2004	JJY	EPA 8270
4-Chloroaniline	<0.31	ug/L	0.31	1.1	1		5/11/2004	5/17/2004	JJY	EPA 8270
4-Chlorophenyl-phenyl ether	<0.27	ug/L	0.27	0.91	1		5/11/2004	5/17/2004	JJY	EPA 8270
4-Nitroaniline	<0.35	ug/L	0.35	1.2	1		5/11/2004	5/17/2004	JJY	EPA 8270
4-Nitrophenol	<1.3	ug/L	1.3	4.4	1		5/11/2004	5/17/2004	JJY	EPA 8270
Acenaphthene	<0.23	ug/L	0.23	0.75	1		5/11/2004	5/17/2004	JJY	EPA 8270
Acenaphthylene	<0.20	ug/L	0.20	0.68	1		5/11/2004	5/17/2004	JJY	EPA 8270
Acetophenone	<0.45	ug/L	0.45	1.5	1		5/11/2004	5/17/2004	JJY	EPA 8270
Aniline	<0.37	ug/L	0.37	1.2	1		5/11/2004	5/17/2004	JJY	EPA 8270
Anthracene	<0.15	ug/L	0.15	0.49	1		5/11/2004	5/17/2004	JJY	EPA 8270
Azobenzene & 1,2-Diphenylhydra	<0.36	ug/L	0.36	1.2	1		5/11/2004	5/17/2004	JJY	EPA 8270
Benzo(a)anthracene	<0.11	ug/L	0.11	0.37	1		5/11/2004	5/17/2004	JJY	EPA 8270
Benzo(a)pyrene	<0.21	ug/L	0.21	0.69	1		5/11/2004	5/17/2004	JJY	EPA 8270
Benzo(b)fluoranthene	<0.25	ug/L	0.25	0.83	1		5/11/2004	5/17/2004	JJY	EPA 8270
Benzo(g,h,i)perylene	<0.34	ug/L	0.34	1.2	1		5/11/2004	5/17/2004	JJY	EPA 8270
Benzo(k)fluoranthene	<0.25	ug/L	0.25	0.82	1		5/11/2004	5/17/2004	JJY	EPA 8270
Benzyl alcohol	<0.32	ug/L	0.32	1.1	1		5/11/2004	5/17/2004	JJY	EPA 8270

CTI LAB#:	252097	Sample Description:	MW01	Sampled:	5/4/2004 1020
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Bis(2-chloroethoxy)methane	<0.21	ug/L	0.21	0.89	1		5/11/2004	5/17/2004	JJY	EPA 8270
Bis(2-chloroethyl)ether	<0.32	ug/L	0.32	1.1	1		5/11/2004	5/17/2004	JJY	EPA 8270
Bis(2-chloroisopropyl)ether	<0.20	ug/L	0.20	0.88	1		5/11/2004	5/17/2004	JJY	EPA 8270
Bis(2-ethylhexyl)phthalate	0.36	ug/L	0.34 *	1.1	1		5/11/2004	5/17/2004	JJY	EPA 8270
Butylbenzylphthalate	<0.37	ug/L	0.37	1.2	1		5/11/2004	5/17/2004	JJY	EPA 8270
Carbazole	<0.10	ug/L	0.10	0.35	1		5/11/2004	5/17/2004	JJY	EPA 8270
Chrysene	<0.11	ug/L	0.11	0.38	1		5/11/2004	5/17/2004	JJY	EPA 8270
Di-n-butylphthalate	1.2	ug/L	0.88 *	3.0	1	B	5/11/2004	5/17/2004	JJY	EPA 8270
Di-n-octylphthalate	<0.28	ug/L	0.28	0.95	1		5/11/2004	5/17/2004	JJY	EPA 8270
Dibenzo(a,h)anthracene	<0.34	ug/L	0.34	1.1	1		5/11/2004	5/17/2004	JJY	EPA 8270
Dibenzofuran	<0.23	ug/L	0.23	0.77	1		5/11/2004	5/17/2004	JJY	EPA 8270
Diethylphthalate	<0.44	ug/L	0.44	1.5	1		5/11/2004	5/17/2004	JJY	EPA 8270
Dimethylphthalate	<0.37	ug/L	0.37	1.2	1		5/11/2004	5/17/2004	JJY	EPA 8270
Fluoranthene	<0.50	ug/L	0.50	1.7	1		5/11/2004	5/17/2004	JJY	EPA 8270
Fluorene	<0.24	ug/L	0.24	0.79	1		5/11/2004	5/17/2004	JJY	EPA 8270
Hexachlorobenzene	<0.19	ug/L	0.19	0.62	1		5/11/2004	5/17/2004	JJY	EPA 8270
Hexachlorobutadiene	<0.24	ug/L	0.24	0.79	1		5/11/2004	5/17/2004	JJY	EPA 8270
Hexachlorocyclopentadiene	<1.0	ug/L	1.0	3.4	1		5/11/2004	5/17/2004	JJY	EPA 8270
Hexachloroethane	<0.27	ug/L	0.27	0.91	1		5/11/2004	5/17/2004	JJY	EPA 8270
Hexachloropropene	<0.17	ug/L	0.17	0.55	1		5/11/2004	5/17/2004	JJY	EPA 8270
Indeno(1,2,3-cd)pyrene	<0.33	ug/L	0.33	1.1	1		5/11/2004	5/17/2004	JJY	EPA 8270
Isophorone	<0.47	ug/L	0.47	1.6	1		5/11/2004	5/17/2004	JJY	EPA 8270
N-Nitroso-di-n-propylamine	<0.21	ug/L	0.21	0.71	1		5/11/2004	5/17/2004	JJY	EPA 8270
N-Nitrosodimethylamine	<0.36	ug/L	0.36	1.2	1		5/11/2004	5/17/2004	JJY	EPA 8270
N-Nitrosodiphenylamine & Diphn	<0.20	ug/L	0.20	0.67	1		5/11/2004	5/17/2004	JJY	EPA 8270
N-Nitrosopyrrolidine	<0.44	ug/L	0.44	1.5	1		5/11/2004	5/17/2004	JJY	EPA 8270
Naphthalene	<0.19	ug/L	0.19	0.62	1		5/11/2004	5/17/2004	JJY	EPA 8270
Nitrobenzene	<0.26	ug/L	0.26	0.86	1		5/11/2004	5/17/2004	JJY	EPA 8270
Pentachlorophenol	<1.4	ug/L	1.4	4.5	1		5/11/2004	5/17/2004	JJY	EPA 8270
Phenanthrene	<0.15	ug/L	0.15	0.49	1		5/11/2004	5/17/2004	JJY	EPA 8270
Phenol	<0.54	ug/L	0.54	1.8	1		5/11/2004	5/17/2004	JJY	EPA 8270
Pyrene	<0.23	ug/L	0.23	0.76	1		5/11/2004	6/17/2004	JJY	EPA 8270
Pyridine	<0.92	ug/L	0.92	3.1	1	M	5/11/2004	5/17/2004	JJY	EPA 8270

CTI LAB#:	252097	Sample Description:	MW01	Sampled:	5/4/2004 1020
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
1,1,2-Trichloroethane	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
1,1,1,2-Tetrachloroethane	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260
1,1,1-Trichloroethane	<0.50	ug/L	0.50	1.8	1			5/7/2004	GRB	EPA 8260
1,1,2,2-Tetrachloroethane	<0.15	ug/L	0.15	0.52	1			5/7/2004	GRB	EPA 8260
1,1-Dichloroethane	<0.50	ug/L	0.50	1.7	1			5/7/2004	GRB	EPA 8260
1,1-Dichloroethene	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260
1,1-Dichloropropene	<0.29	ug/L	0.29	0.97	1			5/7/2004	GRB	EPA 8260
1,2,3-Trichlorobenzene	<0.40	ug/L	0.40	1.5	1			5/7/2004	GRB	EPA 8260
1,2,3-Trichloropropane	<0.40	ug/L	0.40	1.4	1			5/7/2004	GRB	EPA 8260
1,2,4-Trichlorobenzene	<0.50	ug/L	0.50	1.8	1			5/7/2004	GRB	EPA 8260
1,2,4-Trimethylbenzene	<0.40	ug/L	0.40	1.3	1			5/7/2004	GRB	EPA 8260
1,2-Dibromo-3-chloropropane	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
1,2-Dibromoethane	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
1,2-Dichlorobenzene	<0.27	ug/L	0.27	0.89	1			5/7/2004	GRB	EPA 8260
1,2-Dichloroethane	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
cis-1,2-Dichloroethene	<0.25	ug/L	0.25	0.83	1			5/7/2004	GRB	EPA 8260
trans-1,2-Dichloroethene	<0.50	ug/L	0.50	1.8	1			5/7/2004	GRB	EPA 8260
1,2-Dichloropropane	<0.23	ug/L	0.23	0.76	1			5/7/2004	GRB	EPA 8260
cis-1,3-Dichloropropene	<0.12	ug/L	0.12	0.42	1			5/7/2004	GRB	EPA 8260
trans-1,3-Dichloropropene	<0.14	ug/L	0.14	0.48	1			5/7/2004	GRB	EPA 8260
1,3,5-Trimethylbenzene	<0.30	ug/L	0.30	1.1	1			5/7/2004	GRB	EPA 8260
1,3-Dichlorobenzene	<0.30	ug/L	0.30	1.1	1			5/7/2004	GRB	EPA 8260
1,3-Dichloropropane	<0.16	ug/L	0.16	0.55	1			5/7/2004	GRB	EPA 8260
1,4-Dichlorobenzene	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260
2,2-Dichloropropane	<0.40	ug/L	0.40	1.4	1			5/7/2004	GRB	EPA 8260
2-Butanone	<5.0	ug/L	5.0	15	1			5/7/2004	GRB	EPA 8260
2-Chlorotoluene	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
2-Hexanone	<4.0	ug/L	4.0	12	1			5/7/2004	GRB	EPA 8260
4-Chlorotoluene	<0.30	ug/L	0.30	1.1	1			5/7/2004	GRB	EPA 8260
4-Methyl-2-pentanone	<4.0	ug/L	4.0	14	1			5/7/2004	GRB	EPA 8260
Acetone	<5.0	ug/L	5.0	17	1			5/7/2004	GRB	EPA 8260
Benzene	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
Bromobenzene	<0.26	ug/L	0.26	0.85	1			5/7/2004	GRB	EPA 8260

CTI LAB#:	252097	Sample Description:	MW01	Sampled:	5/4/2004 1020
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Bromochloromethane	<0.40	ug/L	0.40	1.3	1			5/7/2004	GRB	EPA 8260
Bromodichloromethane	<0.13	ug/L	0.13	0.42	1			5/7/2004	GRB	EPA 8260
Bromoform	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260
Bromomethane	<0.50	ug/L	0.50	1.6	1			5/7/2004	GRB	EPA 8260
n-Butylbenzene	<0.30	ug/L	0.30	1.1	1			5/7/2004	GRB	EPA 8260
sec-Butylbenzene	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
tert-Butylbenzene	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260
Carbon disulfide	<0.50	ug/L	0.50	1.8	1			5/7/2004	GRB	EPA 8260
Carbon tetrachloride	<0.40	ug/L	0.40	1.4	1			5/7/2004	GRB	EPA 8260
Chlorobenzene	<0.29	ug/L	0.29	0.97	1			5/7/2004	GRB	EPA 8260
Chloroethane	<0.50	ug/L	0.50	1.7	1			5/7/2004	GRB	EPA 8260
Chloroform	<0.25	ug/L	0.25	0.82	1			5/7/2004	GRB	EPA 8280
Chloromethane	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260
Dibromochloromethane	<0.28	ug/L	0.28	0.95	1			5/7/2004	GRB	EPA 8260
Dibromomethane	<0.30	ug/L	0.30	1.1	1			5/7/2004	GRB	EPA 8280
Dichlorodifluoromethane	<0.40	ug/L	0.40	1.4	1			5/7/2004	GRB	EPA 8260
Diisopropyl ether	<0.30	ug/L	0.30	1.2	1			5/7/2004	GRB	EPA 8260
Ethylbenzene	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260
Hexachlorobutadiene	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
Isopropylbenzene	<0.40	ug/L	0.40	1.2	1			5/7/2004	GRB	EPA 8260
p-Isopropyltoluene	<0.40	ug/L	0.40	1.5	1			5/7/2004	GRB	EPA 8260
Methyl tert-butyl ether	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260
Methylene chloride	<0.50	ug/L	0.50	1.8	1			5/7/2004	GRB	EPA 8260
Naphthalene	<0.50	ug/L	0.50	1.5	1			5/7/2004	GRB	EPA 8260
n-Propylbenzene	<0.30	ug/L	0.30	1.1	1			5/7/2004	GRB	EPA 8260
Styrene	<0.30	ug/L	0.30	1.1	1			5/7/2004	GRB	EPA 8260
Tetrachloroethene	<0.40	ug/L	0.40	1.4	1			5/7/2004	GRB	EPA 8260
Tetrahydrofuran	<5.0	ug/L	5.0	17	1			5/7/2004	GRB	EPA 8260
Toluene	<0.40	ug/L	0.40	1.3	1			5/7/2004	GRB	EPA 8260
Trichloroethene	<0.15	ug/L	0.15	0.50	1			5/7/2004	GRB	EPA 8280
Trichlorofluoromethane	<0.50	ug/L	0.50	1.6	1			5/7/2004	GRB	EPA 8260
Vinyl acetate	<1.0	ug/L	1.0	3.3	1			5/7/2004	GRB	EPA 8280
Vinyl chloride	<0.12	ug/L	0.12	0.39	1			5/7/2004	GRB	EPA 8260

CTI LAB#:	252097	Sample Description:	MW01	Sampled:	5/4/2004 1020
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
m & p-Xylene	<0.70	ug/L	0.70	2.5	1			5/7/2004	GRB	EPA 8260
o-Xylene	<0.30	ug/L	0.30	1.0	1			5/7/2004	GRB	EPA 8260

Notes: * Indicates Value in between LOD and LOQ.

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without written approval of this laboratory. The Chain of Custody is attached.

Submitted by: PML

Record Reviewer

QC Qualifiers

Code	Description
A	Analyte averaged calibration criteria within acceptable limits.
B	Analyte detected in associated Method Blank.
C	Toxicity present in BOD sample.
D	Diluted Out.
E	Safe, No Total Coliform detected.
F	Unsafe, Total Coliform detected, no E. Coli detected.
G	Unsafe, Total Coliform detected and E. Coli detected.
H	Holding time exceeded.
J	Estimated value.
L	Significant peaks were detected outside the chromatographic window.
M	Matrix spike and/or Matrix Spike Duplicate recovery outside acceptance limits.
N	Insufficient BOD oxygen depletion.
O	Complete BOD oxygen depletion.
P	Concentration of analyte differs more than 40% between primary and confirmation analysis.
Q	Laboratory Control Sample outside acceptance limits.
R	See Narrative at end of report.
S	Surrogate standard recovery outside acceptance limits due to apparent matrix effects.
T	Sample received with improper preservation or temperature.
V	Raised Quantitation or Reporting Limit due to limited sample amount or dilution for matrix background interference.
W	Sample amount received was below program minimum.
X	Analyte exceeded calibration range.
Y	Replicate/Duplicate precision outside acceptance limits.
Z	Calibration criteria exceeded.



MWH
MONTGOMERY WATSON

Folder #: 40569

Company: MONTGOMERY WATSON

Project: ONYX SPECIAL SERV

Logged By: JLW PM: PMI

JSTODY RECORD

SPECIAL INSTRUCTIONS:

TURNAROUND

☐ PECFA
☐ WL LUST
☐ ACT 307
☐ REPORT DRY WT
☒ OTHER:

☒ 2 WEEKS (standard)
☐ 1 WEEK
☐ 3 DAYS
☐ 1 DAY

[illegible]

* Diss. Metals → Arsenic, Barium,
Cadmium, chromium, lead, selenium, and silver

SIGNATURE		DATE	TIME	SIGNATURE		DATE	TIME
RELINQUISHED BY:	<i>Richard A. Smith</i>	5/4/04	1400	RECEIVED BY:			
RELINQUISHED BY				RECEIVED BY:			
RELINQUISHED BY:				RECEIVED BY:			
RELINQUISHED BY				RECEIVED FOR LABORATORY BY:	<i>Vali H. Hall</i>	5/5/04	103

C-O-C No. 23574

NAME OF COURIER: _____

AIRBILL NUMBER: _____

9-2nd

ANALYTICAL REPORT

1 of 3

MONTGOMERY WATSON HARZA
MARK PAULI
ONE SCIENCE CT
MADISON, WI 53711

Project Name: ONYX SPECIAL SERV
Contract #: 1510
Project #: 2082678.01160101
Folder #: 41760
Purchase Order #:
Arrival Temperature: See COC
Report Date: 7/13/2004
Date Received: 7/8/2004
Reprint Date:

CTI LAB#:	262471	Sample Description:	SD01	Sampled:	7/1/2004 0945
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	53.8	%	N/A	N/A	1			7/9/2004	JHO	EPA 5030A
Metals Results										
Mercury	3.2	mg/kg	0.054	0.16	10		7/10/2004	7/12/2004	NAH	EPA 7471

CTI LAB#:	262472	Sample Description:	MW01	Sampled:	7/1/2004 1030
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Metals Results										
Dissolved Barium	422	ug/L	1.4	4.5	1			7/12/2004	NAH	EPA 6010B
Dissolved Selenium	<5.1	ug/L	5.1	17	1			7/12/2004	NAH	EPA 6010B

CTI LAB#:	262473	Sample Description:	HA01 (1.0-1.5FT)	Sampled:	7/1/2004 1100
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	77.1	%	N/A	N/A	1			7/9/2004	JHO	EPA 5030A
Metals Results										
Mercury	0.19	mg/kg	0.0035	0.011	1		7/10/2004	7/12/2004	NAH	EPA 7471

CTI LAB#:	262474	Sample Description:	HA01 (1.5-2.0 FT)	Sampled:	7/1/2004 1115
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	74.3	%	N/A	N/A	1			7/9/2004	JHO	EPA 5030A
Metals Results										
Mercury	0.23	mg/kg	0.0037	0.011	1		7/10/2004	7/12/2004	NAH	EPA 7471

CTI LAB#:	262475	Sample Description:	HA01A (0-0.5FT)	Sampled:	7/1/2004 1120
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
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WI DNR Lab Certification Number: 15-7066030
OATOP Certification Number: 105-000290

Solid sample results reported on a Dry Weight Basis

CTI LAB#:	262475	Sample Description:	HA01A (0-0.5FT)	Sampled:	7/1/2004 1120
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	59.2	%	N/A	N/A	1			7/9/2004	JHO	EPA 5030A
Metals Results										
Mercury	1.5	mg/kg	0.049	0.15	10		7/10/2004	7/12/2004	NAH	EPA 7471

CTI LAB#:	262476	Sample Description:	HA01B (0-0.5FT)	Sampled:	7/1/2004 1210
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	54.6	%	N/A	N/A	1			7/9/2004	JHO	EPA 5030A
Metals Results										
Mercury	2.4	mg/kg	0.048	0.14	10		7/10/2004	7/12/2004	NAH	EPA 7471

CTI LAB#:	262478	Sample Description:	HA01C (0-0.5 FT)	Sampled:	7/1/2004 1240
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	75.1	%	N/A	N/A	1			7/9/2004	JHO	EPA 5030A
Metals Results										
Mercury	1.9	mg/kg	0.025	0.076	10		7/10/2004	7/12/2004	NAH	EPA 7471

CTI LAB#:	263388	Sample Description:	HA01A (0.5-1.0FT)	Sampled:	7/1/2004 1130
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	70.7	%	N/A	N/A	1			7/14/2004	GCE	EPA 5030A
Metals Results										
Mercury	0.24	mg/kg	0.028	0.084	10		7/17/2004	7/19/2004	NAH	EPA 7471

CTI LAB#:	263389	Sample Description:	HA01B (0.5-1.0FT)	Sampled:	7/1/2004 1215
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	75.3	%	N/A	N/A	1			7/14/2004	GCE	EPA 5030A
Metals Results										
Mercury	0.49	mg/kg	0.029	0.081	10		7/17/2004	7/19/2004	NAH	EPA 7471

CTI LAB#:	263390	Sample Description:	HA01C (0.5-1.0FT)	Sampled:	7/1/2004 1245
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	78.5	%	N/A	N/A	1			7/14/2004	GCE	EPA 5030A
Metals Results										

CTI LAB#:	263390	Sample Description:	HA01C (0.5-1.0FT)	Sampled:	7/1/2004	1245
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Mercury	0.066	mg/kg	0.0036	0.011	1		7/17/2004	7/19/2004	NAH	EPA 7471

CTI LAB#:	264665	Sample Description:	HA01A (1.0-1.5FT)	Sampled:	7/1/2004	1145
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	75.4	%	N/A	N/A	1	H		7/21/2004	GCE	EPA 5030A
Metals Results										
Mercury	0.073	mg/kg	0.0031	0.0093	1		7/24/2004	7/26/2004	NAH	EPA 7471

CTI LAB#:	264666	Sample Description:	HA01B (1.0-1.5FT)	Sampled:	7/1/2004	1225
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	82.5	%	N/A	N/A	1	H		7/21/2004	GCE	EPA 5030A
Metals Results										
Mercury	0.017	mg/kg	0.0028	0.0084	1		7/24/2004	7/26/2004	NAH	EPA 7471

Notes: * Indicates Value in between LOD and LOQ.

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without written approval of this laboratory. The Chain of Custody is attached.

Submitted by: PMU
Record Reviewer

4

QC Qualifiers

<u>Code</u>	<u>Description</u>
A	Analyte averaged calibration criteria within acceptable limits.
B	Analyte detected in associated Method Blank.
C	Toxicity present in BOD sample.
D	Diluted Out.
E	Safe, No Total Coliform detected.
F	Unsafe, Total Coliform detected, no E. Coli detected.
G	Unsafe, Total Coliform detected and E. Coli detected.
H	Holding time exceeded.
J	Estimated value.
L	Significant peaks were detected outside the chromatographic window.
M	Matrix spike and/or Matrix Spike Duplicate recovery outside acceptance limits.
N	Insufficient BOD oxygen depletion.
O	Complete BOD oxygen depletion.
P	Concentration of analyte differs more than 40% between primary and confirmation analysis.
Q	Laboratory Control Sample outside acceptance limits.
R	See Narrative at end of report.
S	Surrogate standard recovery outside acceptance limits due to apparent matrix effects.
T	Sample received with improper preservation or temperature.
V	Raised Quantitation or Reporting Limit due to limited sample amount or dilution for matrix background interference.
W	Sample amount received was below program minimum.
X	Analyte exceeded calibration range.
Y	Replicate/Duplicate precision outside acceptance limits.
Z	Calibration criteria exceeded.

WI DNR Lab Certification Number: 15-7088030
 DATCP Certification Number: 105200289

Solid sample results reported on a Dry Weight Basis



CHAIN OF CUSTODY

Folder #: 41760

Company: MONTGOMERY WATS

Project: ONYX SPECIAL SERV

Logged By: JLW PM: PMI

ECIAL UCTIONS:

TURNAROUND

- ☒ 2 WEEKS (standard)
☐ 1 WEEK
☐ 3 DAYS
☐ 1 DAY

DRY WT

WET WT

PROJECT NAME: <i>Onyx Special Services</i>			PROJECT #: <i>2082678.01/60101</i>		
CITY: <i>Port Washington</i>			STATE: <i>WI</i>		
SAMPLER(S): <i>Rich Joslin</i>					
COLLECTION DATE	COLLECTION TIME	GRAB / COMP	SAMPLE ID	NO OF CONTAINERS	USE ONLY
7/1/04	945	6	SD01	1	<p>Mercury (74724) Dissolved Selenium Dissolved Barium</p>
	1030		MW01	3	
	1100		HA01 (1.0-1.5 FE)	1	
	1115		HA01 (1.5-2.0 FE)	1	
	1120		HA01A (0-0.5 FE)	1	
	1130		HA01A (0.5-1.0 FE)	1	
	1145		HA01A (1.0-1.5 FE)	1	
	1155		HA01A (1.5-2.0 FE)	1	
	1210		HA01B (0-0.5 FE)	1	
	1215		HA01B (0.5-1.0 FE)	1	
	1225		HA01B (1.0-1.5 FE)	1	<p>Extra Volume</p> <p>Sediment water Soil</p> <p>① Hold ① Hold ① Hold ① Hold ① Hold</p>
LAB NO.					
262471					
262472					
262473					
262474					
262475					
263388					
264665 (du)					
262476					
263389					
264666 (du)					

SPECIAL INSTRUCTIONS:

① Hold → Hold samples until MWH instructs to analyze them

TAMPER EVIDENT SEAL INTACT? YES NO NOT PRESENT

SEAL NO:

SAMPLES RECEIVED ON ICE? YES NO TEMP: 5.6 °C

7/8/04 jlw 1139

PROJ. MGR:

L. Linde marston

SIGNATURE	DATE	TIME	SIGNATURE	DATE	TIME
RELINQUISHED BY: <i>Richard Joslin</i>	7/1/04	1600	RECEIVED BY:		
RELINQUISHED BY:			RECEIVED BY:		
RELINQUISHED BY:			RECEIVED BY:		
RELINQUISHED BY:			RECEIVED FOR LABORATORY BY: <i>John Joslin</i>	7/8/04	1239

C-O-C No. 23577

jlw 7/4/04 1327

NAME OF COURIER:

AIRBILL NUMBER:

* See Special *
Instructions 2 of 2



CHAIN OF CUSTODY RECORD

SPECIAL INSTRUCTIONS:
☐ PECFA
☐ WI LUST
☐ ACT 307
☐ REPORT DRY WT
☒ OTHER:

TURNAROUND
☒ 2 WEEKS (standard)
☐ 1 WEEK
☐ 3 DAYS
☐ 1 DAY

PROJECT NAME <i>Onyx Special Services</i>			PROJECT #: <i>2082678-0460101</i>				
CITY: <i>Port Washington</i>			STATE: <i>WZ</i>				
SAMPLER(S): <i>Rich Joslin</i>							
COLLECTION DATE	COLLECTION TIME	GRAB / COMP	SAMPLE ID	NO. OF CONTAINERS	REMARKS	LAB USE ONLY	
7/1/04	1230	G	HABIB (1.5-2.0 FE)	1 X	① Hold	MATRIX	LAB NO
	1240		HABIC (0-0.5 FE)	1 X		Soil	
	1245		HABIC (0.5-1.0 FE)	1 X	① Hold		262478
	1255		HABIC (1.0-1.5 FE)	1 X	① Hold		263390
	1300		HABIC (1.5-2.0 FE)	1 X	① Hold		

SPECIAL INSTRUCTIONS:
 ① Hold → Hold samples until MWH instructs to Analyze them

TAMPER EVIDENT SEAL INTACT? YES NO NOT PRESENT

SEAL NO.:

SAMPLES RECEIVED ON ICE? YES X NO TEMP: 5.6 °C

7/8/04 1139 Jlw

PROJ. MGR.: *L. Linnamangos*

SIGNATURE	DATE	TIME	SIGNATURE	DATE	TIME
RELINQUISHED BY: <i>[Signature]</i>	7/1/04	1600	RECEIVED BY:		
RELINQUISHED BY:			RECEIVED BY:		
RELINQUISHED BY:			RECEIVED BY:		
RELINQUISHED BY:			RECEIVED FOR LABORATORY BY: <i>[Signature]</i>	7/8/04	1239

C-O-C No. 23439

NAME OF COURIER:

AIRBILL NUMBER:

6-end

ANALYTICAL REPORT

1 of 3

MONTGOMERY WATSON HARZA
MARK PAULI
ONE SCIENCE CT
MADISON, WI 53711

Project Name: ONYX SPECIAL SERV
Contract #: 1510
Project #: 2082678.01180101
Folder #: 42350
Purchase Order #:
Arrival Temperature: See COC
Report Date: 8/11/2004
Date Received: 8/9/2004
Reprint Date:

CTILAB#:	267958	Sample Description:	SD01A	Sampled:	8/5/2004	1345
----------	--------	---------------------	-------	----------	----------	------

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	66.3	%	N/A	N/A	1			8/9/2004	JHO	EPA 5030A
Metals Results										
Mercury	0.45	mg/kg	0.032	0.096	10		8/10/2004	8/10/2004	NAH	EPA 7471

CTILAB#:	267958	Sample Description:	SD01B	Sampled:	8/5/2004	1355
----------	--------	---------------------	-------	----------	----------	------

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	31.1	%	N/A	N/A	1			8/9/2004	JHO	EPA 5030A
Metals Results										
Mercury	3.1	mg/kg	0.093	0.28	10		8/10/2004	8/10/2004	NAH	EPA 7471

CTILAB#:	267959	Sample Description:	SD01J	Sampled:	8/5/2004	1400
----------	--------	---------------------	-------	----------	----------	------

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	39.7	%	N/A	N/A	1			8/9/2004	JHO	EPA 5030A
Metals Results										
Mercury	3.4	mg/kg	0.080	0.18	10		8/10/2004	8/10/2004	NAH	EPA 7471

CTILAB#:	267960	Sample Description:	SD01C	Sampled:	8/5/2004	1410
----------	--------	---------------------	-------	----------	----------	------

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	67.2	%	N/A	N/A	1			8/9/2004	JHO	EPA 5030A
Metals Results										
Mercury	0.12	mg/kg	0.0025	0.0074	1		8/10/2004	8/10/2004	NAH	EPA 7471

WI DNR Lab Certification Number: 15-7066030
NATOP Certification Number: 105-000789

Solid sample results reported on a Dry Weight Basis

CTI LAB#:	267961	Sample Description:	SD01G	Sampled:	8/5/2004	1420
-----------	--------	---------------------	-------	----------	----------	------

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	71.5	%	N/A	N/A	1			8/9/2004	JHO	EPA 5030A
Metals Results										
Mercury	0.035	mg/kg	0.0029	0.0087	1		8/10/2004	8/10/2004	NAH	EPA 7471

CTI LAB#:	267962	Sample Description:	SD01I	Sampled:	8/5/2004	1425
-----------	--------	---------------------	-------	----------	----------	------

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	68.3	%	N/A	N/A	1			8/9/2004	JHO	EPA 5030A
Metals Results										
Mercury	0.49	mg/kg	0.029	0.088	10		8/10/2004	8/10/2004	NAH	EPA 7471

CTI LAB#:	267963	Sample Description:	SD01H	Sampled:	8/5/2004	1435
-----------	--------	---------------------	-------	----------	----------	------

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	49.5	%	N/A	N/A	1			8/9/2004	JHO	EPA 5030A
Metals Results										
Mercury	0.71	mg/kg	0.036	0.11	10		8/10/2004	8/10/2004	NAH	EPA 7471

CTI LAB#:	267984	Sample Description:	SD01H DUP	Sampled:	8/5/2004	1440
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	69.7	%	N/A	N/A	1			8/9/2004	JHO	EPA 5030A
Metals Results										
Mercury	0.29	mg/kg	0.0041	0.012	1		8/10/2004	8/10/2004	NAH	EPA 7471

CTI LAB#:	267965	Sample Description:	SD01E	Sampled:	8/5/2004	1445
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Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	43.0	%	N/A	N/A	1			8/9/2004	JHO	EPA 5030A
Metals Results										
Mercury	4.7	mg/kg	0.085	0.26	20		8/10/2004	8/10/2004	NAH	EPA 7471

CTI LAB#:	267966	Sample Description:	SD01F	Sampled:	8/5/2004	1445
-----------	--------	---------------------	-------	----------	----------	------

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	49.9	%	N/A	N/A	1			8/9/2004	JHO	EPA 5030A
Metals Results										

CTI LAB#:	267966	Sample Description:	SD01F	Sampled:	8/5/2004	1445
-----------	--------	---------------------	-------	----------	----------	------

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Mercury	0.82	mg/kg	0.035	0.10	10		8/10/2004	8/10/2004	NAH	EPA 7471

CTI LAB#:	267967	Sample Description:	SD01D	Sampled:	8/5/2004	1450
-----------	--------	---------------------	-------	----------	----------	------

Analyte	Result	Units	LOD	LOQ	Dilution	Qualifier	Prep Date	Analysis Date	Analyst	Method
Inorganic Results										
Solids, Percent	54.0	%	N/A	N/A	1			8/9/2004	JHO	EPA 5030A
Metals Results										
Mercury	0.040	mg/kg	0.0027	0.0080	1		8/10/2004	8/10/2004	NAH	EPA 7471

Notes: * Indicates Value in between LOD and LOQ.

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without written approval of this laboratory. The Chain of Custody is attached.

Submitted by: PML
Record Reviewer



Folder #: 42350

Company: MONTGOMERY WATS

Project: ONYX SPECIAL SERV

Logged By: JLW PM: PMI

JDY RECORD

SPECIAL INSTRUCTIONS:

- ☐ PECFA
☐ WILUST
☐ ACT 307
☐ REPORT DRY WT
☒ OTHER:

TURNAROUND

- ☒ 2 WEEKS (standard)
☐ 1 WEEK
☐ 3 DAYS
☐ 1 DAY

PROJECT NAME:		PROJECT #:	
Onyx Special Services		2082678.01160101	
CITY: Port Washington		STATE: WI	
SAMPLER(S): Brian Kappen			
COLLECTION DATE	COLLECTION TIME	GRAB / COMP	SAMPLE ID
8/5/04	1345	G	SD01a
8/5/04	1355	G	SD01b
8/5/04	1400	G	SD01j
8/5/04	1410	G	SD01c
8/5/04	1420	G	SD01g
8/5/04	1425	G	SD01i
8/5/04	1435	G	SD01h
8/5/04	1440	G	SD01h (dup)
8/5/04	1445	G	SD01e
8/5/04	1445	G	SD01f
8/5/04	1450	G	SD01d

LAB USE ONLY	
MATRIX	LAB NO.
	267956
	267958
	267959
	267960
	267961
	267962
	267963
	267964
	267965
	267966
	267967

SPECIAL INSTRUCTIONS:

TAMPER EVIDENT SEAL INTACT? YES NO NOT PRESENT

SEAL NO.:

SAMPLES RECEIVED ON ICE? X YES NO TEMP: 1.9 °C

PROJ. MGR.: L. Hinne-manstons

SIGNATURE	DATE	TIME	SIGNATURE	DATE	TIME
RELINQUISHED BY: B. J. Kappen	8/6/04	945	RECEIVED BY:		
RELINQUISHED BY:			RECEIVED BY:		
RELINQUISHED BY:			RECEIVED BY:		
RELINQUISHED BY:			RECEIVED FOR LABORATORY BY:	8/9/04	1205

C-O-C No. 23463

NAME OF COURIER: _____
AIRBILL NUMBER: _____

4-ent

Appendix K

National Enforcement Investigation Center Protocol



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
J.F.K. FEDERAL BUILDING, BOSTON, MA 02203

MEMORANDUM

DATE: July 31, 2002

SUBJ: Reactivity Worksheet for use in lieu of Rescinded Reactivity Tests

FROM: Kenneth B. Rota, Chief, RCRA Compliance Unit
Office of Environmental Stewardship

TO: RCRA Compliance Unit

The purpose of this memorandum is to provide an alternate approach for determining whether a solid waste meets the definition of reactivity under RCRA in light of the withdrawal of the SW-846 testing procedure for this characteristic. This memorandum includes a discussion of RCRA reactivity, the use of Henry's Law to demonstrate potential reactivity and an explanation of the Excel Spreadsheet that was developed for various cases by Joe Lowry of the Agency's National Enforcement Investigations Center (NEIC) to calculate the potential reactivity of chemical compounds. I believe the spreadsheet is a useful tool and can be used more broadly to aid in determining potential reactivity.

Reactivity Discussion:

The definition of reactivity, as defined at 40 CFR 262.23, is a narrative definition that describes a specific chemical property or reaction, which, when exhibited by a solid waste, would cause such waste to be regulated by RCRA and considered a reactive waste designated by the EPA hazardous waste code D003. As a narrative definition, EPA has the option of relying on specific analytical testing, where prescribed under SW-846, or in the absence of such testing, relying on other appropriate methods to demonstrate that a solid waste meets the definition of reactivity.

EPA developed a specific testing protocol, referred to as the reactivity test, for the purpose of determining whether or not solid wastes that contain reactive sulfide or cyanide compounds would release toxic gases and vapors in sufficient quantity and concentrations to be considered hazardous and potentially dangerous to human health and the environment. This testing protocol was used for a number of years to determine whether cyanide and sulfide-bearing wastes met the RCRA characteristic of reactivity without controversy.

On April 21, 1998, EPA withdrew the cyanide and sulfide reactivity guidance. This withdrawal was due to critical errors discovered in the development of the original guidance by the National Enforcement Investigations Center (NEIC). NEIC determined that the reactivity test did not properly predict the reactivity of cyanide and sulfide-bearing wastes nor did it establish maximum concentration levels for cyanide and hydrogen sulfide gases that were protective of human health and the environment.

For example, the old threshold for hydrogen sulfide gas was established at 500 ppm. NEIC's review of hydrogen sulfide determined that 138 ppm of sulfide in an aqueous solution at pH 2 is the equilibrium concentration for an air concentration of 40,000 ppmV. This concentration represents the lower explosive limit for hydrogen sulfide. Translated, the old hydrogen sulfide concentration level of 500 ppm was more than 350% above the concentration level necessary for a sulfide-bearing waste to reach the lower explosive limit.

Similarly, for hydrogen cyanide, the old threshold limit was established at 250 ppm. NEIC's review of cyanide determined that 16 ppm cyanide in an aqueous solution at pH 2 is the equilibrium concentration for an air concentration of 50 ppmV. This air concentration represents the IDLH (Immediately Dangerous to Life and Health threshold for hydrogen cyanide) concentration level that would result in human death within a 30 minute period. Despite the withdrawal of the SW-846 testing guidance, EPA has stated that it expected generators to continue classifying their high concentration sulfide-bearing and cyanide-bearing wastes as hazardous based on the narrative standard.

EPA's Industrial User Program, like RCRA, is concerned about the potential generation of toxic or explosive fumes and gases. To determine whether industrial water discharges could create potentially hazardous conditions, the Industrial User Program utilizes Henry's Law to assess what it calls "fume toxicity" and explosivity. [See Office of Water Enforcement and Permits, Guidance Manual on the Development and Implementation of Local Discharge Limitations Under the Pretreatment Program, December 1987]. The main purpose of this guidance is to avoid and eliminate wastewater discharges that may potentially result in the generation of toxic or explosive fumes in the sewer system. Since the definition of reactivity includes the generation of toxic gases, vapors or fumes in a quantity sufficient to present a danger to human health and the environment, the fume toxicity methodology outlined in the Industrial User Guidance provides an alternate, acceptable method for demonstrating the characteristic of reactivity.

After the withdrawal of the SW-846 guidance for determining reactivity, NEIC developed a separate methodology for determining whether a solid waste exhibits the characteristics of reactivity. This methodology relies on the use of Henry's Law and, unbeknownst to NEIC, is based on the same chemistry and physics principles contained in the December 1987 Industrial User Guidance that is already used as an accepted method for determining potential toxicity and explosivity reactions in wastewater.

NEIC's methodology contains some minor refinements, but nonetheless is the existing water guidance and relies on the same principles of Henry's Law. The guidance examines the affects of temperature on the equilibrium concentrations. Temperature is a very important factor and must be considered when estimating mass transfer. Similarly, pH can affect mass transfer of certain toxins and is also included as part of NEIC's reactivity analysis. The equilibrium concentrations can be thought of as "maximum potential" and, depending on the nature of a system, air concentrations less than equilibrium might occur under a particular circumstance.

To illustrate an example of the point made above, EPA has measured 2% to 20% of equilibrium for hydrogen sulfide in a sewer (EPA 625/1-74-005). A static situation such as a tank or room involving hydrogen sulfide may more closely approximate equilibrium since toxic gases would collect, become more concentrated and represent an increasing threat to human health and the environment. A sewer system on the other hand, represents a more dynamic system and is not typically viewed as situation where equilibrium could be reached. Nonetheless, static air pockets may exist within a sewer system that impede the escape of hydrogen sulfide gas, allowing hydrogen sulfide to collect and approach equilibrium, thus reaching concentration levels that may also be potentially explosive or otherwise dangerous to human health and the environment. Dissolution kinetics is also an important consideration and is included in NEIC's methodology to address the uncertainty associated with the reliance on a short-term laboratory test that may not accurately predict or reflect the actual long-term environmental fate.

Explanation of the NEIC Excel Reactivity Spreadsheet:

The following data columns are identified on the Excel Spreadsheet Columns developed by NEIC. To read the Column letters, the spreadsheet must be viewed in Excel:

Column Headings and Information Contained Therein:

Column A: Constituent Name

Column B: Chemical Formula

Column C: Temperature in degrees Celsius

Column D: Temperature in degrees Kelvin

Column E: K_h (mole L^{-1} atm $^{-1}$) is Henry's Law constant taken from the NIST database when available, corrected for the temperature entered in Column C (NIST; "NIST

Chemistry Webbook"; Standard Reference Database 69; July 2001 release;
<http://www.webbook.NIST.gov/chemistry/>).

NIST K_h values are given as mole L^{-1} bar $^{-1}$ for a temperature of 25°C.

$$K_h = e^{((\ln K_h) + (((1/T) - (1/298.15))((d(\ln K_h)/d(1/T))))(1.01325 \text{ bar atm}^{-1})}$$

Column Headings and Information Contained Therein (Continued):

Column F: pH in standard units

Column G: $*K_h$ is the effective Henry's Law constant for the total concentration rather than just the volatile species. For example, the total concentration is cyanide plus hydrogen cyanide. It is based on the dissociation constant of the acid or base and the pH placed in Column F. Dissociation constants were taken from a NIST database when available (NIST; "Critically Selected Stability Constants of Metal Complexes"; Standard Reference Database 46; Version 4.0; November 1997).

$$*K_h = K_h(1 + 10^{(pH - pK_a)}) \text{ for mono-protonated species and } *K_h = K_h(1 + 10^{(pH - pK_1)} + 10^{(2pH - pK_1 - pK_2)}) \text{ for di-protonated species, except for ammonia where } *K_h = (1 + 10^{(pK_a - pH)})$$

Column H: Molecular weight in grams/mole

Column I: Conversion of the effective Henry's law constant given in Column G to different concentration units.

$$(*K_h)(MW) = (\text{mole } L^{-1} \text{ atm}^{-1})(g \text{ mole}^{-1}) = g L^{-1} \text{ atm}^{-1}$$

$$(g L^{-1} \text{ atm}^{-1})(1 \times 10^{-6} \text{ atm ppmV}^{-1}) / (1 \times 10^{-6} g L^{-1} \text{ ppb}^{-1}) = \text{ppb ppmV}^{-1}$$

Column J: Inversion of the effective Henry's law constant (K_h , water/air) given in Column I and unit change to give the effective Henry's law constant as air / water ($*H$).

$$(1000 \text{ ppb ppm}^{-1}) / (\text{ppb ppmV}^{-1}) = \text{ppmV ppm}^{-1}$$

Column K: Table spacer.

Column L: Threshold Limit Value (TLV)(ppmV).

Column M: The equilibrium aqueous concentration (ppm) to give the Threshold Limit Value.

$$(\text{TLV, ppmV}) / (*H, \text{ppmV ppm}^{-1}) = \text{ppm.}$$

Column N: Table spacer.

Column O: Immediately Dangerous to Life and Health Value (IDLH)(ppmV).

Column P: The equilibrium aqueous concentration (ppm) to give the Immediately Dangerous to Life and Health Value.

$$(\text{IDLH, ppmV}) / (*\text{H, ppmV ppm}^{-1}) = \text{ppm}.$$

Column Headings and Information Contained Therein (Continued):

Column Q: Table spacer.

Column R: Lower Explosive Limit (LEL)(ppmV).

Column S: The equilibrium aqueous concentration (ppm) to give the Lower Explosive Limit (ppmV).

$$(\text{LEL, ppmV}) / (*\text{H, ppmV ppm}^{-1}) = \text{ppm}.$$

Reading the chart - Using one of the Hydrogen Cyanide Examples:

The NEIC chart lists hydrogen cyanide three separate times using different temperatures and pH standard Units. Using the first instance on the chart for Hydrogen Cyanide and reading across provides the following information:

1. The compound is Hydrogen Cyanide (HCN)
2. The temperature is 25 degrees Celsius
3. The temperature converted to Kelvin is 298.15 (25°C + 273.15)
4. Using the formula for Henry's Law, HCN is 12.16 Molar/Atmosphere
5. A pH of 2 standard units will be used to determine reactivity
6. Henry's law corrected for acid dissociation is 12.1590 Molar/Atmosphere
7. Molecular weight of hydrogen cyanide is 27.03 grams/Mole
8. Converts HCN to a water concentration using Henry's law multiplied by the molecular weight to yield 328.6 ppb/ppmV.
9. Converts 328.6 ppb/ppmV to an air concentration of 3.04 ppmV/ppm

[Note: Based on the conversion, 1 ppb of HCN in the water is approximately equal to 1 ppm in the air when converted to a ppm concentration (1000/((MW)(K_b)))]

What does this mean in English?:

After calculating the aqueous-phase reaction of HCN and converting the unit of measurement to ppmV/ppm (Column M), we can compare this value directly with the OSHA TLV and IDLH values to determine where gases may be produced in sufficient quantity to be toxic to human health.

We know from using Henry's law above that the aqueous-phase reaction for HCN at 25 degrees Celcius under standard temperature and pressure yields 328.6 ppb/ppmV of HCN which, when converted into ppm equals 3.04 ppmV/ppm. The OSHA TLV for

HCN in air is 5 ppmV. The OSHA TLV divided by 3.04 ppmV/ppm results in the number 1.64 ppm, which means that 1.64 ppm of cyanide is needed in water to reach the TLV threshold of 5 ppmV in air.

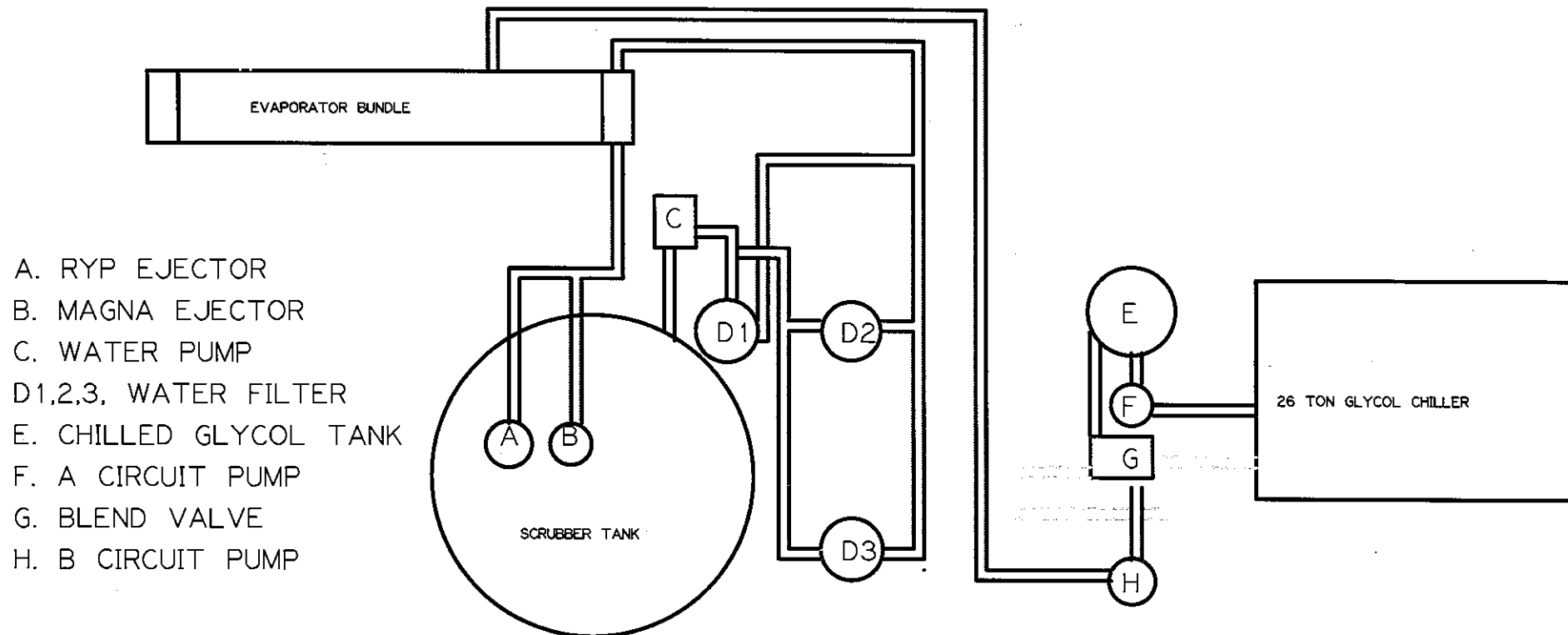
To take this one step further, the IDLH value (Immediately Dangerous to Life and Health: 30 minute exposure results in death) for HCN is 50 ppm. The IDLH of 50 ppmV divided by the 3.04 ppmV/ppm result in the number 16.4 ppm which means that 16.4 ppm of cyanide in water is needed to reach the IDLH threshold of 50 ppmV in air.

Despite the withdrawal of the reactivity test procedures, the NEIC chart provides an alternate means for calculating whether certain chemicals meet the narrative definition for reactivity.

Appendix L
Not Needed for 2025 FPOR Renewal
(VESTS August 31, 2009 Renewal Application for Air Pollution Control
Operation Permit 01-DNH-339-OP)

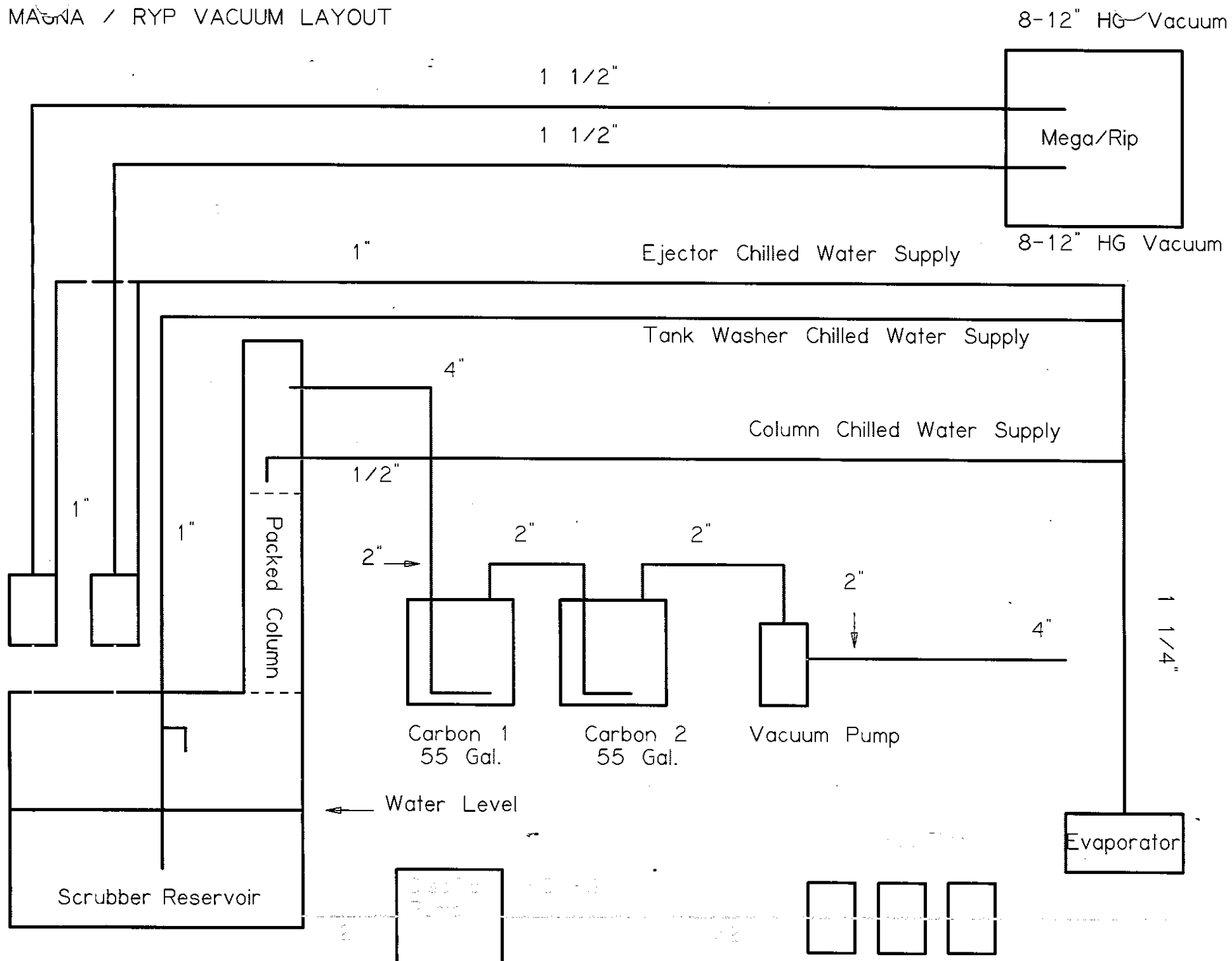
Appendix M

Miscellaneous Unit Equipment Information



MAGNA/RYP COOLING WATER LAYOUT

MAGNA / RYP VACUUM LAYOUT

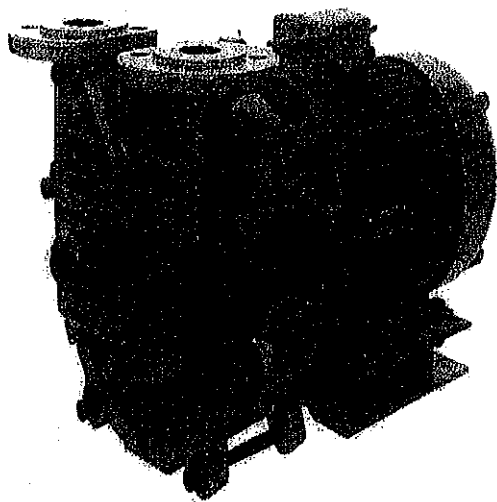


TRAVAINI PUMPS USA

TRMB 40

Single Stage Medium/High Vacuum Pumps

PERFORMANCE DATA	: From 25 Torr	CAPACITY: 40 – 150 cfm
FEATURES	: Single-stage rotating pump with electric motor ball bearings grease lubricated.	
SHAFT SEALING	: Mechanical seal	
OPTIONS	: Direct monoblock with electric motors.	



TECHNICAL DATA

PUMP TYPE		TRMB 40-110		TRMB 40-150		TRMB 40-200	
Speed	RPM	1450	1750	1450	1750	1450	1750
Motor - installed power	HP	4	5	5	7.5	7	10
Average service liquid flow	GPM	5	5	5	5	5	5
Noise level at 60 Torr	dB(A)	88	68	69	69	72	72
Minimum suction pressure	Torr	25	25	25	25	25	25

Pumps are provided with threaded connections for service liquid, pump draining, anticavitation valve.

Pumps are also provided, by request, with auxiliary threaded connections, companion flanges, flanged air-liquid separator tank, non return valve, vacuum relief valve, valve to control the flow of the liquid supply, vacuum gauges, pressure gauges and compound gauges. We can also provide information on our water sealed and oil sealed systems.

For more detailed information please contact our Sales Office.

Example for Model Designation

T R M B 40 – 200 / GH

T	Travaini Pump USA construction
R	Liquid Ring Pump
M	Single stage pump with valves for medium and high vacuum – direct monoblock
B	Design number
40	Flange size (mm)
200	Nominal capacity (m ³ /h)
GH	Materials of construction GH-RA-A3 = See table

Standard Materials of Construction

Part No.	Description	GH	F	RA	A3
101	Suction/ Discharge casing	Cast Iron			Stainless Steel AISI 316
120	Rear casing				
230	Impeller	Bronze		Ductile Iron	

Special Materials Available Upon Request

Indicative table: for further information please consult our Sales Office

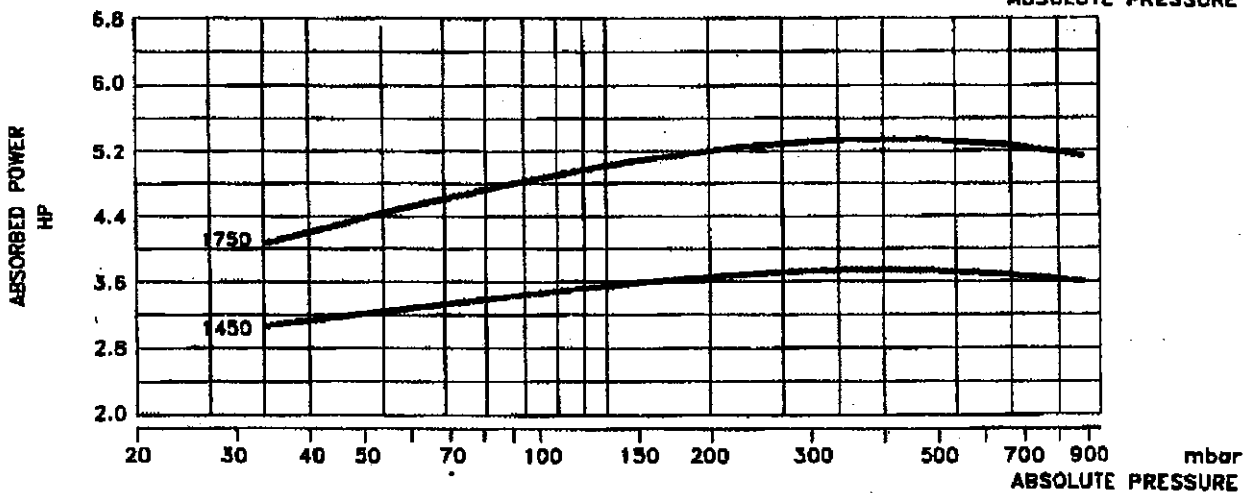
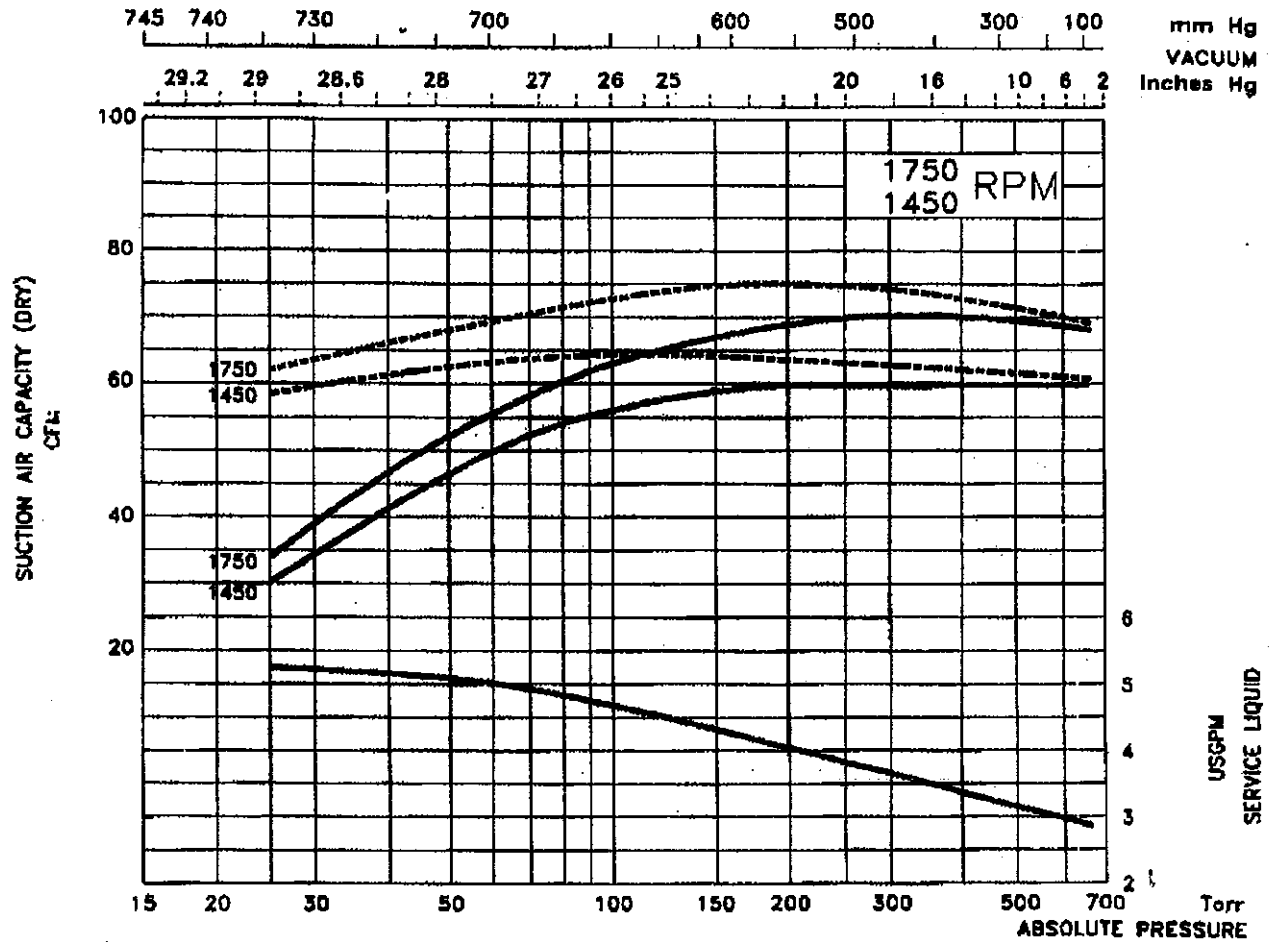
DATA BASED ON :
 DRY AIR AT 68 °F - 20 °C
 SATURATED AIR AT 68 °F - 20 °C
 SERVICE LIQUID WATER
 SERVICE LIQUID TEMPERATURE 59 °F - 15 °C
 DISCHARGE PRESSURE 1013 mbar

S.S. PUMPS
 CAPACITY : -10%

Tol.: 10%

PERFORMANCE DATA
 LIQUID RING VACUUM PUMP
 PUMP MODEL

TRMB/TRVB 40-110



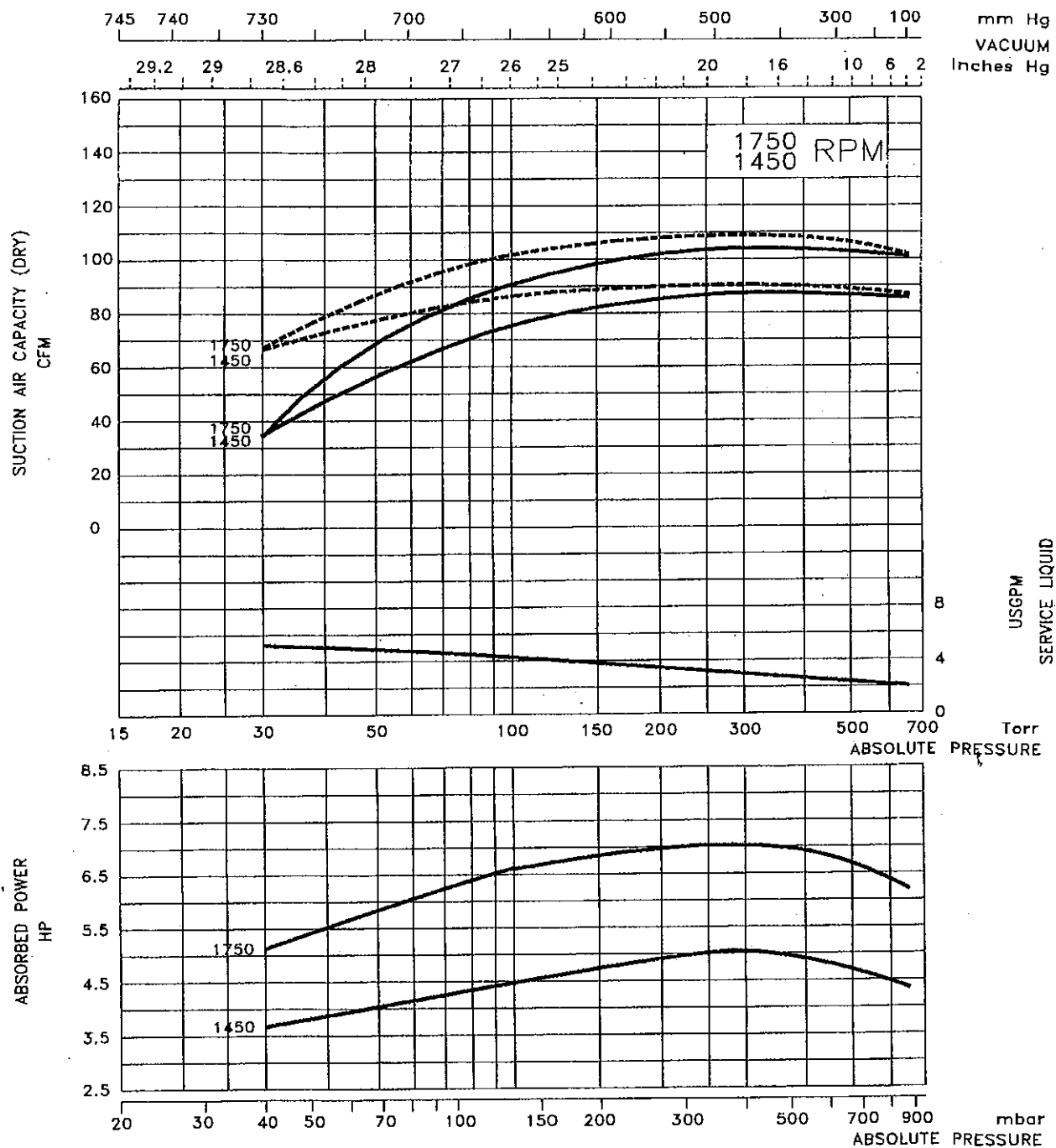
DATA BASED ON :
 DRY AIR AT 68 °F - 20 °C
 SATURATED AIR AT 68 °F - 20 °C
 SERVICE LIQUID WATER
 SERVICE LIQUID TEMPERATURE 59 °F - 15 °C
 DISCHARGE PRESSURE 1013 mbar

S.S. PUMPS
 CAPACITY: -10%

Tol.: 10%

PERFORMANCE DATA
 LIQUID RING VACUUM PUMP
 PUMP MODEL

TRMB/TRVB 40-150



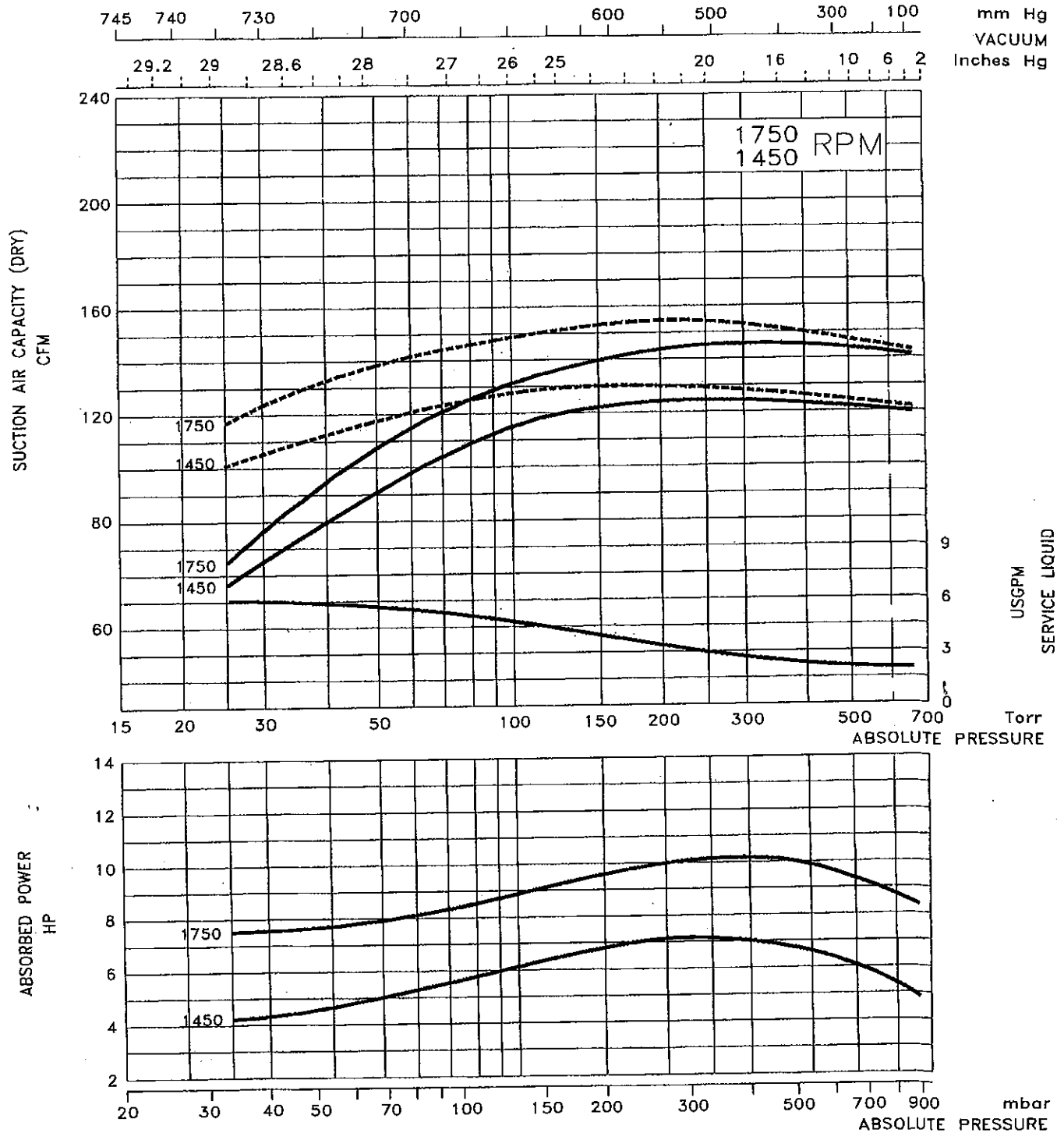
DATA BASED ON :
 DRY AIR AT 68 °F - 20 °C
 SATURATED AIR AT 68 °F - 20 °C
 SERVICE LIQUID WATER
 SERVICE LIQUID TEMPERATURE 59 °F - 15 °C
 DISCHARGE PRESSURE 1013 mbar

S.S. PUMPS
 CAPACITY: -10%

Tol.: 10%

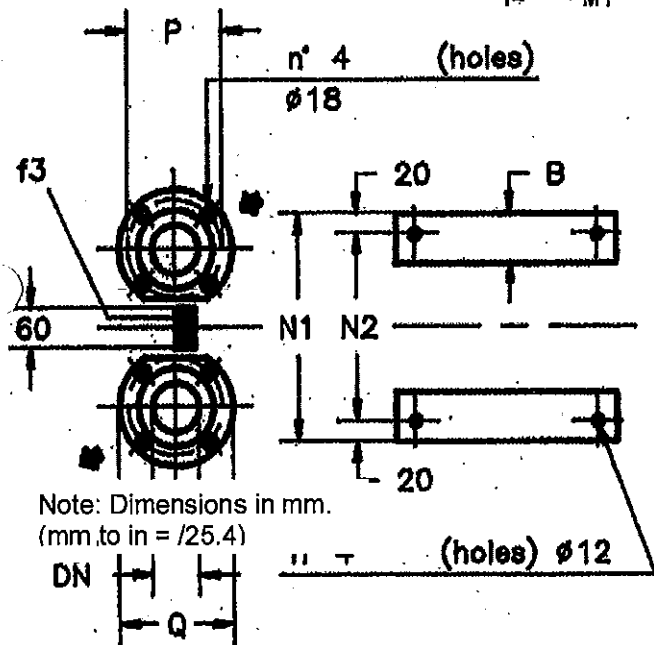
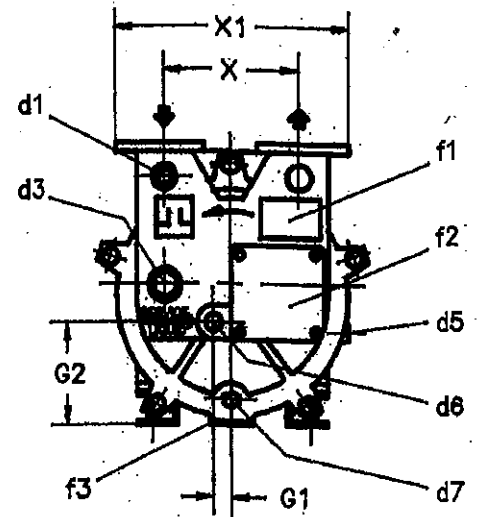
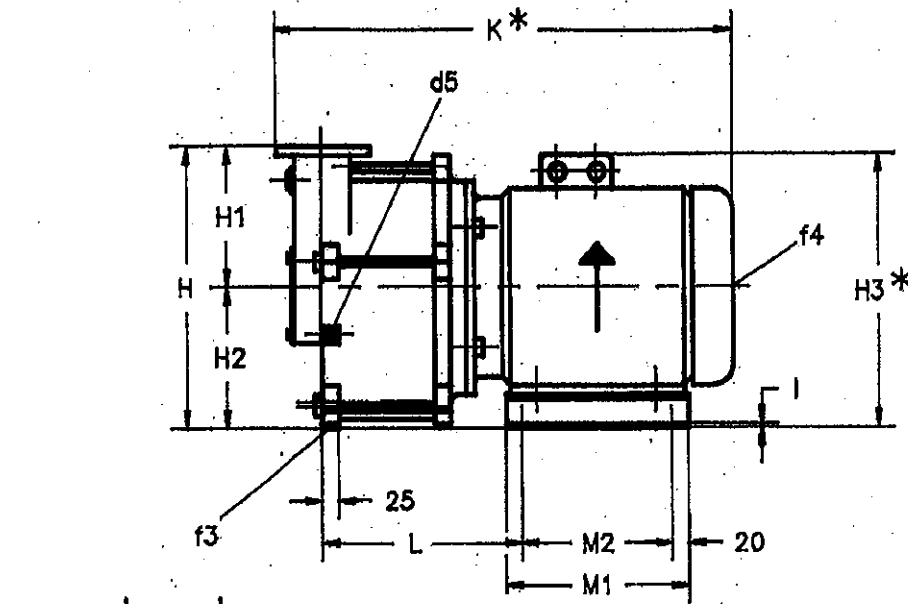
PERFORMANCE DATA
 LIQUID RING VACUUM PUMP
 PUMP MODEL

TRMB/TRVB 40-200



TRMB 40

Overall Dimensions



- d1 = Ø 1/4" GAS F – Vacuum gauge connection
- d3 = TRMB 40 – Ø 1/2" GAS F – Auxiliary connection
- d3 = TRMB 50 – Ø 3/4" GAS F – Auxiliary connection
- d5 = Ø 1/8" GAS F – Anticavitation valve connection
- d6 = TRMB 40 – Ø 1/2" GAS F – Liquid supply inlet connection
- d7 = Ø 1/4" GAS F – Drain connection
- f1 = Pump identification plate
- f2 = Vacuum valve inspection opening
- f3 = Shock-isolating mounting
- f4 = Threaded hole for motor shaft rotation checking

Note: Dimensions in mm.
(mm to in = /25.4)

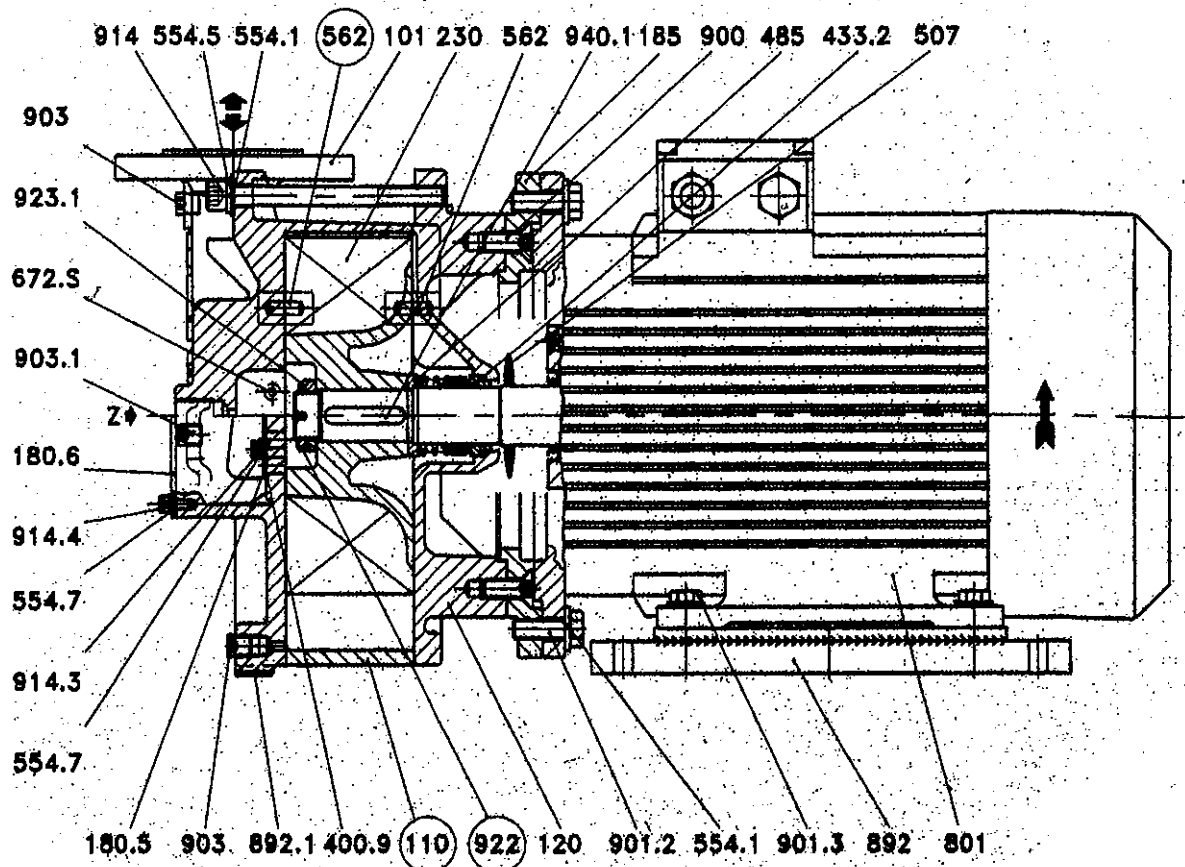
Pump Type	4 Pole s Mot or HP	Pump																Flanges			Wt lbs.*
		B	G 1	G2	H	H1	H2	H3*	I	K*	L	M1	M2	N1	N2	X	X1	D N	P	Q	
TRMB 40-110	5	60						325	5	565	190	228	188	230	190						156
TRMB 40-150	7.5	80	0	160	325	165	160	355	20	690	245	300	260			180	330	40	110	150	233
TRMB 40-200	10	60		180	345		180	375	5	684	278	228	188	256	216						244

• Dimensions are for reference only. Please consult factory for certified drawings.

The weights are referred to GH construction.

TRMB 40

Typical Cross Section



COMPONENTS

VDMA No	DESIGNATION	VDMA No	DESIGNATION
101	Suc./dis. casing	801	Electric motor
110	Impeller casing (A3 construction only)	892	Motor foot
120	Rear casing	892.1	Shock-isolating mounting
180.5	Valve plate	900	Screw
180.6	Closing plate	901.2	Screw
185	Clampring	901.3	Screw
• 230	Impeller	903	Plug
• 400.9	Plane valve	903.1	Plug
• 433.2	Mechanical seal	914	Screw
485	Mech. seal locking ring	914.3	Screw
507	Thrower	914.4	Screw
554.1	Washer	922	Nut (A3 construction only)
554.5	Washer	923.1	Lockring
554.7	Washer	940.1	Key
562	Cylinder pin	Z	Liquid supply inlet
672.S	Cock		

○ = A3 construction only

• = Recommended spare parts

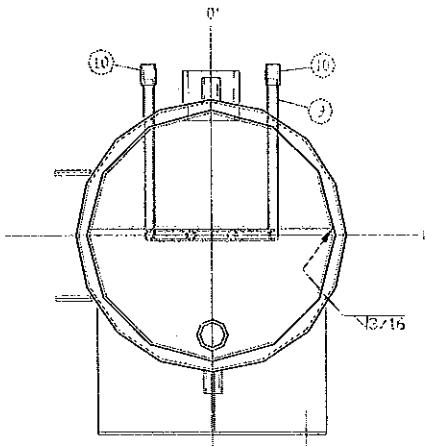
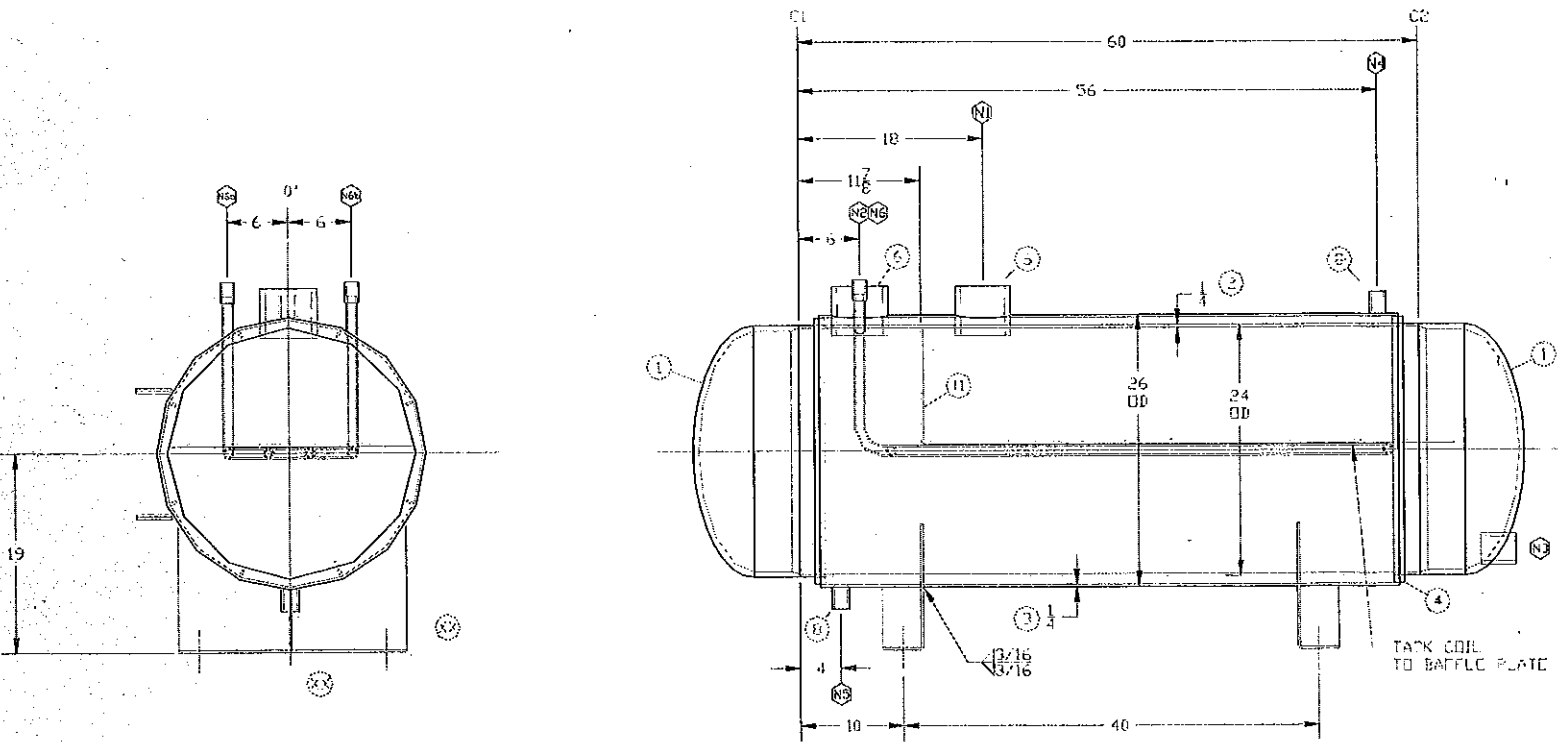
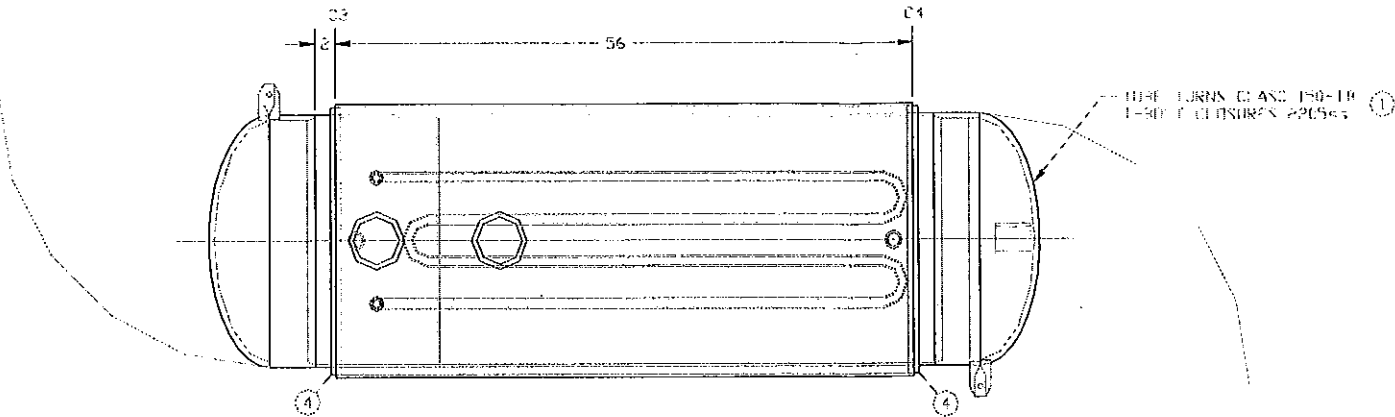
Continuing research at Travaini Pumps USA results in product improvements; therefore, any specification may subject to change without notice.

NOZZLE SCHEDULE

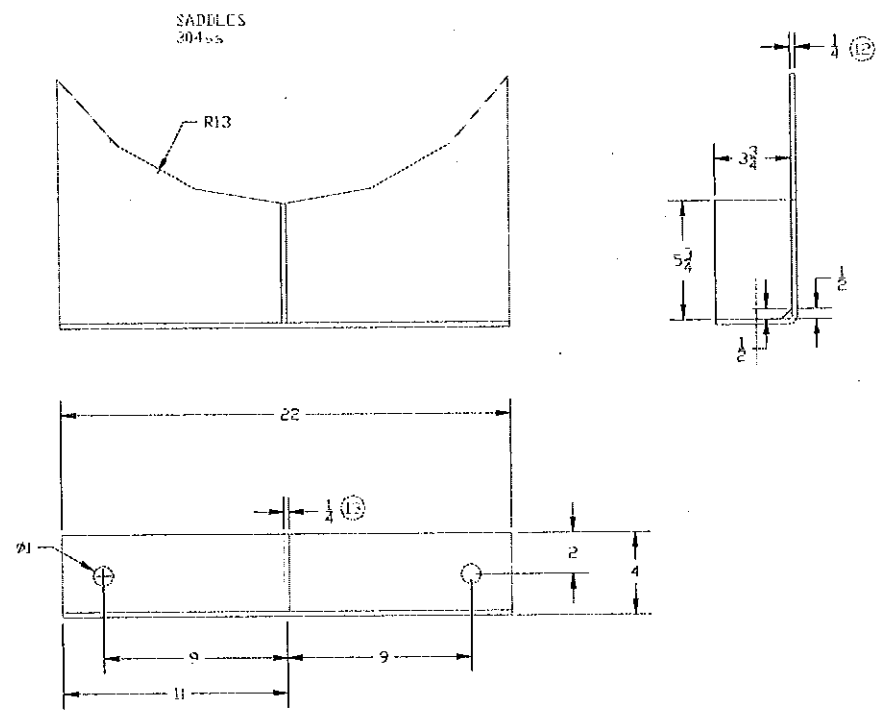
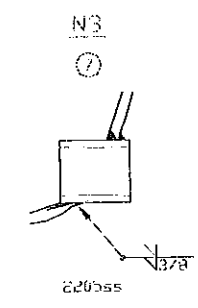
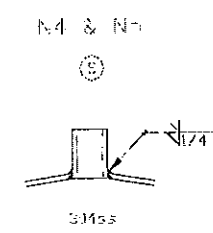
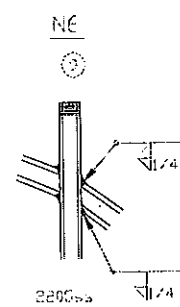
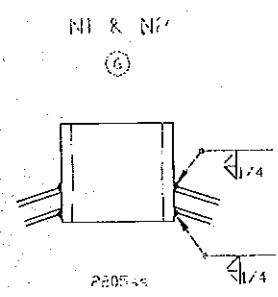
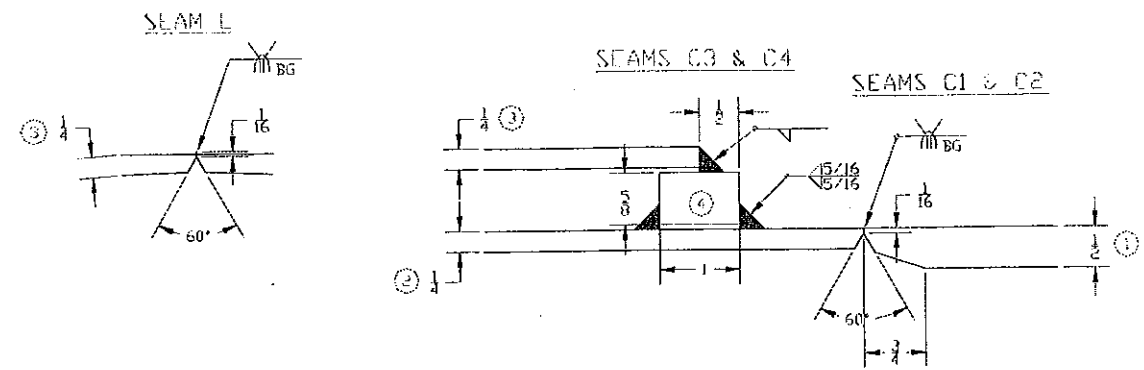
ID	NO	DESCRIPTION	SERVICE
NI	1	4" 3000# TRD FULL COUPLING	VAPOR INLET
NI	2	4" 3000# TRD FULL COUPLING	VAPOR OUTLET
NI	3	2" 3000# TRD FULL COUPLING	DRAIN
NI	4	1" 3000# TRD FULL COUPLING	JACKET INLET
NI	5	1" 3000# TRD FULL COUPLING	JACKET OUTLET
NI	6	1/2" 3000# TRD FULL COUPLING	COUPLING COIL

NOTES:

- 1) DESIGN PER ASME SECTION VIII, NO STAMP
2) DESIGN CONDITIONS:
SHELL = -15 PSIG @ -20° TO 600°; HYDROSTATIC TEST PRESSURE = 20 PSIG
JACKET = 45 PSIG @ -20° TO 600°; HYDROSTATIC TEST PRESSURE = 71 PSIG
3) 1/16" CORROSION ALLOWANCE
4- NO RT
5) SHELL, CLOSURE, SHELL COUPLING, COIL, AND BAFFLE PLATE = 3005 SS
JACKET, JACKET COUPLING, CLOSURE RING, JACKET FLOW BARS, AND SADDLES = 304SS
6) WELD USING CHAW PROCESS WITH 100% BY GAD. USE 222000 FILLER FOR WELDING 3005SS.
SEE ERD FOR WELDING 304SS AND 304SS TO 3005SS. USE WPS 28 FOR WELDING.

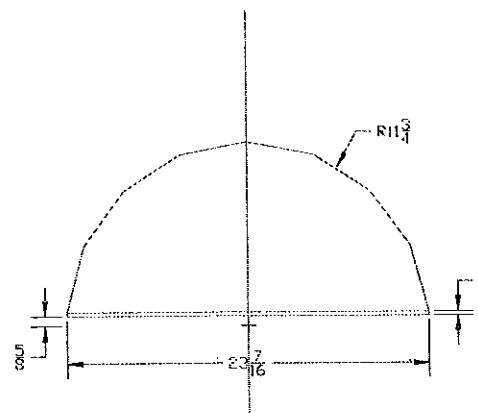
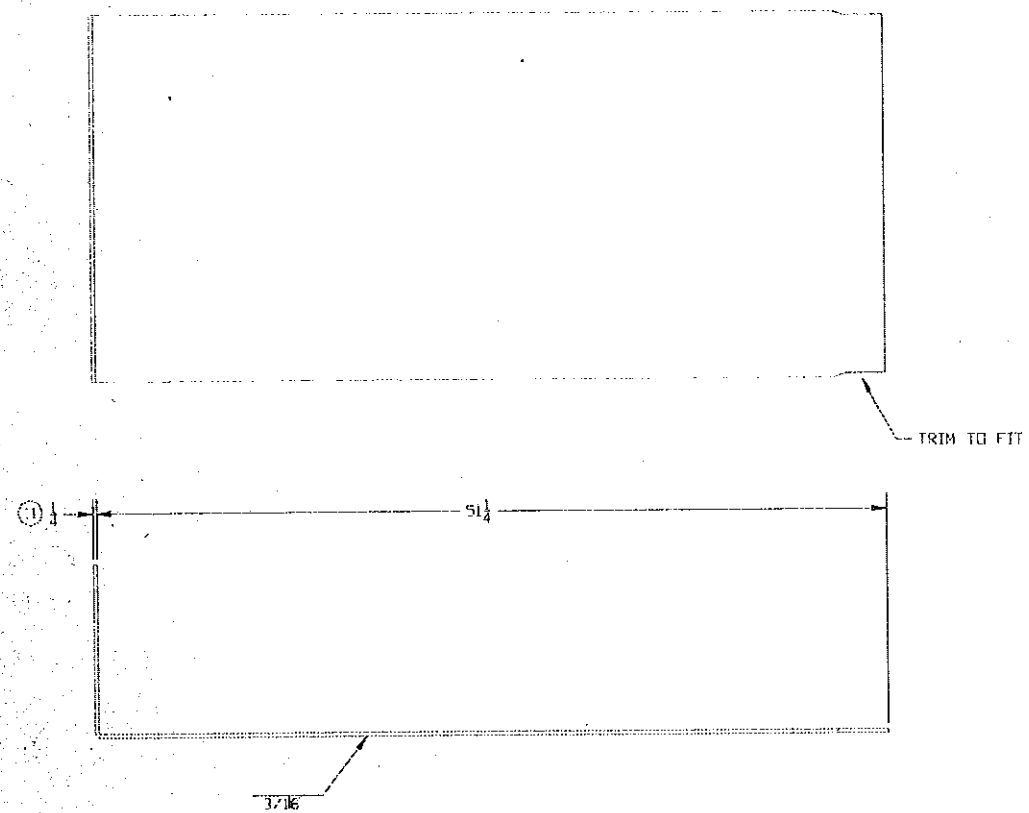


MILWAUKEE BOILER INTERNATIONAL, LLC			
CUSTOMER: MEDICA ENVIRONMENTAL SVCS			
DATE: 10/10/2011	SCALE: 1/4"	REV: 0	

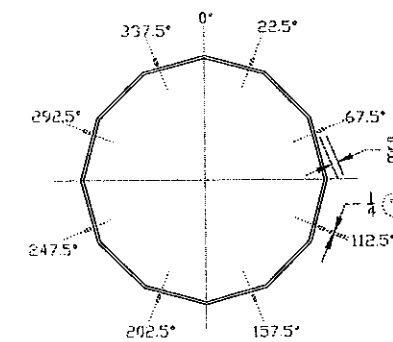
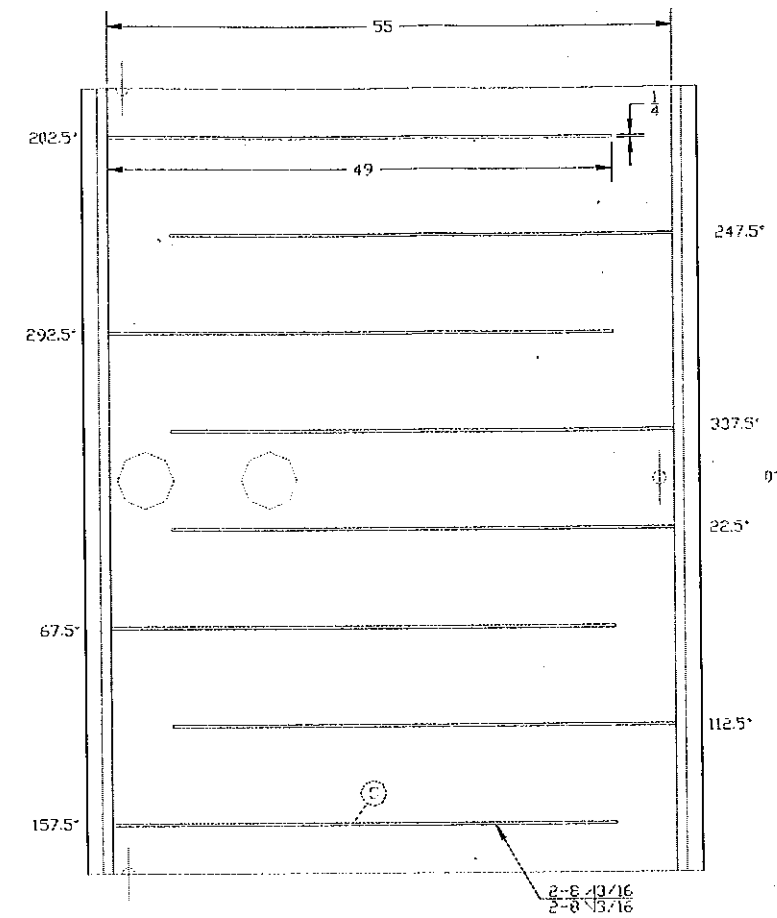


MILWAUKEE BOILER			
INTERNATIONAL, LLC			
CONDENSER VESSELS			
DESIGNED BY	VEOLIA ENVIRONMENTAL	DATE	REV
10/4/20	3/4	0	

BAFFLE PLATE
E200ss

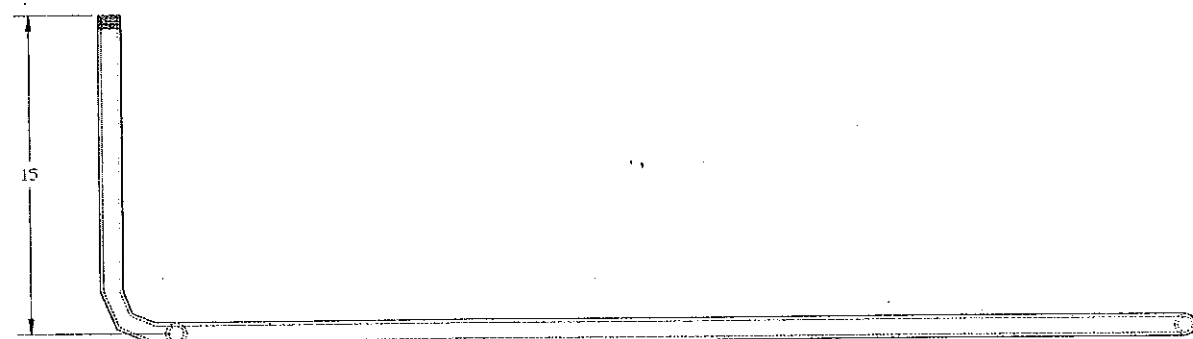
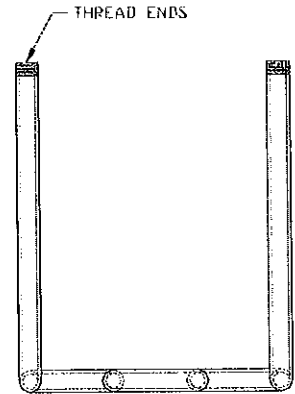
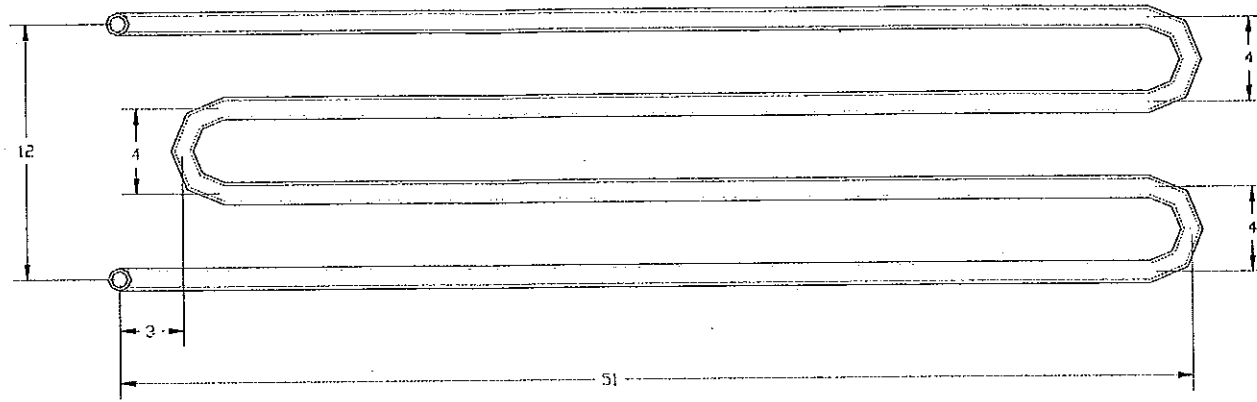


FLAT LAYOUT OF JACKET FLOW BARS

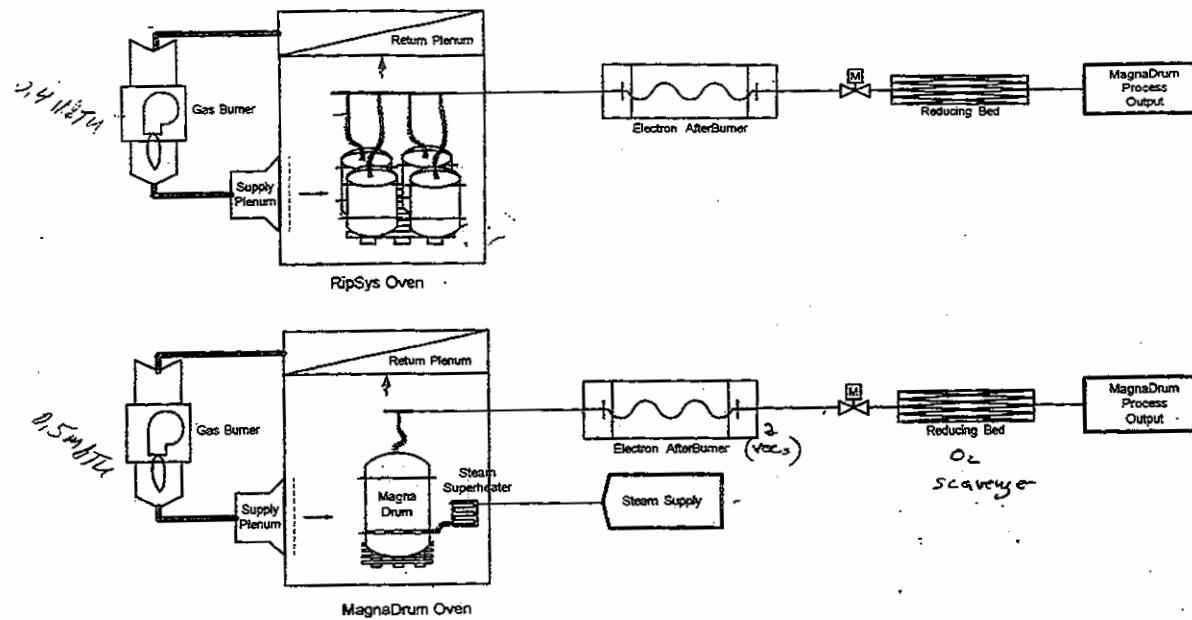


MILWAUKEE BOILER INTERNATIONAL, LLC			
CONDENSER VESSELS			
CUSTOMER VEOLIA ENVIRONMENTAL SVCS			
DESIGNED BY J. SANBORG	DATE 10/16/06	SCALE 1:1	REV 0
PWC NO. 104,29 2/4			

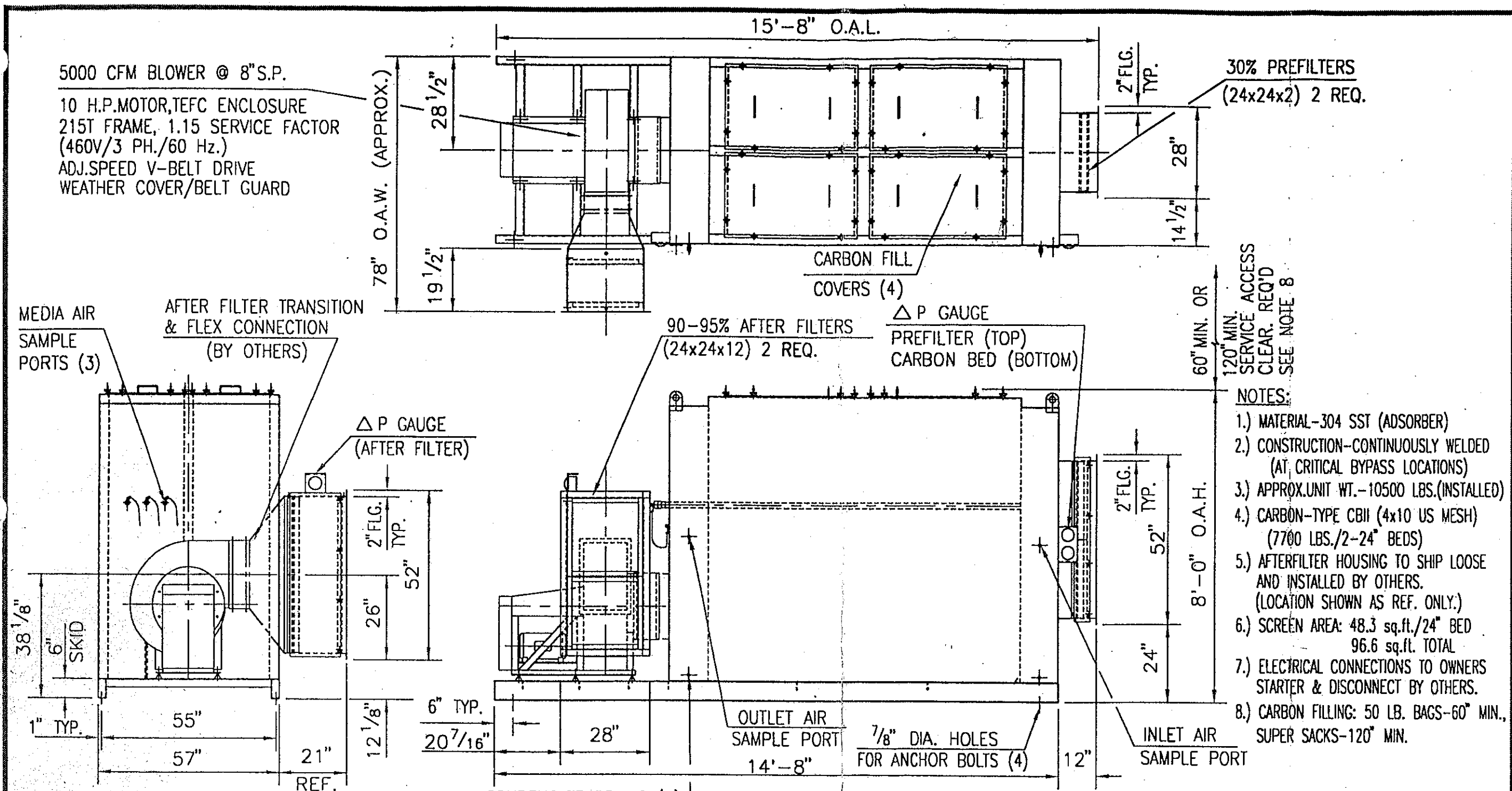
COOLING COIL
3/4" SCH 80S PIPE 2205cs (10)



MILWAUKEE BOILER			
INTERNATIONAL, LLC			
CONDENSOR VESSELS			
CUSTOMER: VECOLIA ENVIRONMENTAL SVCS			
DESIGNED BY: S. SANDERS	DATE: 10/14/76	SCALE: 1/8"	REV: 0
DWG NO: 0429-4/4			



Effective Energy Associates 322 South Albert Street Mt. Prospect, IL 60056 847-394-3212		Superior Special Services Combination Retort-In-Place System	
		Evaporation Section	
SSE	FSCM NO	DWG NO	REV
11/17			1
SCALE	NONE	RJA	SHEET 4 OF



CONDENSATE DRAINS (2)						DRAWN	JDW	01/27/00	WATERLINK® Barnebey Sutcliffe				
						CHECKED							
						APPROVED							
						TOLERANCES			CUSTOMER: SUPERIOR SPECIAL SERVICES, INC.			JOB NO. A030078	
						FRACTIONAL	± 1/4"		TITLE				
						.XX	-		GENERAL ARRANGEMENT				
						.XXX	-		HECA-5000-24/CBII CARBON ADSORBER				
						ANGULAR		± 1/2"		SCALE 3/8" = 1'-0"	SIZE	DRAWING NUMBER	REV.
											B	31574	
THIS DRAWING REMAINS THE EXCLUSIVE PROPERTY OF WATERLINK BARNEBEY SUTCLIFFE. ALL AUTHORIZED COPIES ARE LOANED IN GOOD FAITH AND SUBJECT TO RETURN UPON REQUEST. ANY FURTHER REPRODUCTION WITHOUT THE CONSENT OF WATERLINK BARNEBEY SUTCLIFFE IS THEREBY PROHIBITED.													
FILE: 07/31574S1						PLOT: 14.75,9.75		ORIGIN: 0,0		FACTOR: 1=32			

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FILE: 07/31574S1 PLOT: 14.75,9.75 ORIGIN: 0,0 FACTOR: 1=32

Appendix N
Not Needed for 2025 FPOR Renewal
(Air Emission Inventory Summary Reports)

Appendix O
Not Needed for 2025 FPOR Renewal
(WDNR Laboratory Certification)

Appendix P
Not Needed for 2025 FPOR Renewal
(Household Hazardous Waste Collection Facility Plan of Operation)

Appendix Q

Cost of Closure Estimation Summary

Endpoint Solutions

6871 South Lovers Lane
Franklin, WI 53132
Telephone: (414) 427-1200
Fax: (414) 427-1259
www.endpointcorporation.com

Mr. Justin Provo
Environmental Health & Safety Manager
Veolia North America
215 South Park Street
Port Washington, WI 53074

April 2, 2025

Subject: Cost Estimate for Closure Findings Summary
Veolia North America – Mineral Springs Facility
1275 Mineral Springs Drive; Port Washington, Wisconsin

Dear Mr. Provo:

Endpoint Solutions (Endpoint) is providing this letter and supporting appendix information as a summary of the methodologies, findings, and details associated with the cost estimate for closure calculations as required by Wisconsin Administrative Code (WAC) NR 664.0142 for the Veolia North America (Veolia) hazardous waste management operations conducted at 1275 Mineral Springs Drive in the City of Port Washington, WI (the 'Facility').

SUMMARY

Veolia operates the Facility as a licensed hazardous waste management facility identified by Environmental Protection Agency site identification number WID988566543. Pursuant to the State of Wisconsin requirements found in WAC NR 664.0142 and as required for the purposes of licensing renewal, Endpoint has prepared an estimate of closure costs for the Facility pursuant to the requirements therein including the following;

- NR 664.0142(1)(a)-(d);
 - *The estimate shall equal the cost of final closure at the point in the facility's active life when the extent and manner of its operation would make closure the most expensive, as indicated by its closure plan.*
 - *The closure cost estimate shall be based on the costs to the owner or operator of hiring a third party to close the facility. A third party is a party who is neither a parent corporation nor a subsidiary of the owner or operator. The owner or operator may use costs for on-site disposal if the owner or operator can demonstrate that on-site disposal capacity will exist at all times over the life of the facility.*
 - *The closure cost estimate may not incorporate any salvage value that may be realized with the sale of hazardous wastes, or non-hazardous wastes if applicable under s. [NR 664.0113 \(4\)](#), facility structures or equipment, land or other assets associated with the facility at the time of partial or final closure.*

- *The owner or operator may not incorporate a zero cost for hazardous wastes, or non-hazardous wastes if applicable under s. [NR 664.0113 \(4\)](#), that might have economic value.*

Using best engineering practices, Facility details from a physical observation and documented site conditions as well as other supporting materials such as historic invoices and material records; vendor quotations, and waste disposal costs Endpoint has prepared estimates of the cost for closure for onsite process equipment, container storage areas, pollution control equipment and containment pads associated with hazardous waste management activities.

The findings and resulting summary cost estimate for closure are included in **Appendix A**. The following sections serve to document the processes, data sources, and assumptions used to generate these estimated costs.

COST ESTIMATE FOR CLOSURE

The included cost estimate, paired with a 10% contingency factor, identified a cost estimate for closure of **\$2,565,171.82** as summarized in **Appendix A** with closure cost separated by subject area and cost category. In line with past submissions, these costs are subject to inflationary adjustments and adjustment based on site revision pursuant to WAC 664.0142(2)-(4).

Calculations to estimate this cost were generated based upon review of the following core activity parameters;

- Maximum reasonable inventory of wastes on hand by area as identified as operating maximum inventories;
- Use of current disposal, handling and transportation operating rates and costs from vendors and end recipients of assorted products with no consideration of no cost or beneficial use applications of products or wastes; and,
- ‘Worst case’ estimates pursuant to the scheduling outlined as it pertains to potential impacts to closure costs (e.g. onsite wastewater treatment or retort treatment were not considered feasible).

The costs summarized in **Appendix A** are broken into the primary sub-categories and costs as detailed below. Further methodology details and Facility data relevant to these estimations are included in the detail summary tables included in **Appendix B**.

Details regarding specific closure activities to be performed by the third party closure contractor are more thoroughly described in in the included closure proposal provided by North Shore Environmental Contractors in **Appendix C**.

A Professional Engineer’s attestation summarizing the details and analysis made is additionally included in the Summary of Certification form included in **Appendix D**.

CLOSING

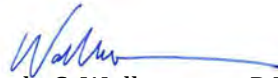
We trust this narrative and analytical summary in support of the Cost Estimate for Closure for the Facility will meet your expectations and needs for an ongoing tool to demonstrate estimated closure costs. Should you have any additional questions or concerns regarding the findings herein please do not hesitate to contact us.

Sincerely,

Endpoint Solutions



Alex J. Mentzer, P.E.
Project Manager



Wade C. Wollermann, P.E.
Principal Engineer

Enclosures:

Appendix A: **Cost Estimate of Closure Summary**

Appendix B: **Cost Estimate of Closure Detail Summary**

Appendix C: **March 18, 2025 NSEC Proposal For Facility Closure Services**

Appendix D: **Summary of Certification**

APPENDIX A

COST ESTIMATE OF CLOSURE SUMMARY

Estimated Closure Cost Category Summary	Sum of Extended Cost
Facility Closure Contingency	\$ 233,197.44
10% Closure Contingency	\$ 233,197.44
Facility Wide	\$ 866,850.00
Air Monitoring	\$ 15,570.00
Decontamination Services	\$ 775,000.00
Engineer's Closure Planning and Report	\$ 22,200.00
Wipe Analysis	\$ 26,880.00
Closure Management and Oversight	\$ 27,200.00
HW Storage Unit-Closure Debris	\$ 51,768.40
Bulk Mercury Waste Transportation	\$ 7,333.33
Bulk Non-Haz Waste Transportation	\$ 450.00
Drum Mercury Waste Transportation	\$ 17,701.77
Drum Non-Haz Waste Transportation	\$ 450.00
Non-Hazardous Debris	\$ 4,059.30
Waste Mercury Debris (Micro)	\$ 12,611.40
Waste Mercury Debris (Retort)	\$ 6,945.00
Non-Hazardous Decontamination Solutions	\$ 2,217.60
Elemental Mercury Transportation	\$ -
HW Storage Unit-HW Inventory	\$ 1,103,999.96
COD Vials	\$ 11,575.00
Elemental Mercury DOE Storage	\$ 693,014.96
Mercury Compound Lab Packs	\$ 32,410.00
Waste Calcium Phosphate Powder	\$ 15,675.00
Waste Mercury Containing Devices	\$ 196,775.00
Waste Mercury Contaminated Soil	\$ 9,700.00
Waste Mercury Debris (Micro)	\$ 29,100.00
Waste Mercury Debris (Retort)	\$ 115,750.00
Mercury Recover/Retort Operation	\$ 162,682.52
Bulk Mercury Waste Transportation	\$ 14,666.67
Bulk Non-Haz Waste Transportation	\$ 450.00
Drum Mercury Waste Transportation	\$ 3,681.10
Drum Non-Haz Waste Transportation	\$ 450.00
Hazardous Condensate Water (P10/P11)	\$ 1,527.90
Hazardous Condensate Water (P14)	\$ 763.95
Non-Hazardous Debris	\$ 4,059.30
Waste Closure Debris (Micro)	\$ 25,222.80
Waste Mercury Activated Carbon	\$ 108,805.00
Hazardous Decontamination Solutions	\$ 3,055.80
Outdoor Emission Control Equipment	\$ 146,673.50
Bulk Mercury Waste Transportation	\$ 2,444.44
Bulk Non-Haz Waste Transportation	\$ 450.00
Drum Mercury Waste Transportation	\$ 4,168.31
Drum Non-Haz Waste Transportation	\$ 450.00
Hazardous Condensate Water	\$ 2,546.50
Non-Hazardous Debris	\$ 2,029.65
Waste Closure Debris (Micro)	\$ 4,203.80
Waste Mercury Activated Carbon	\$ 127,325.00
Hazardous Decontamination Solutions	\$ 3,055.80
Grand Total	\$ 2,565,171.82

APPENDIX B

COST ESTIMATE OF CLOSURE DETAIL SUMMARY

Location-Class	Cost Category	Method	Recipient	Qty	UOM	Unit Cost (\$/UOM)	Unit Rate Details	Extended Cost
HW Storage Unit-HW Inventory	Waste Calcium Phosphate Powder	Sub C Landfill	WM Emelle	50	Drums	\$ 313.50	CH Contract Pricing; \$0.57/lb; 500 lb / drum; validated by All Source/ NSEC	\$ 15,675.00
HW Storage Unit-HW Inventory	Waste Mercury Debris (Retort)	Retort Processing	WM Emelle	50	Drums	\$ 2,315.00	CH Contract Pricing; \$4.63 / lb; 500 lb / drum; validated by All Source/ NSEC	\$ 115,750.00
HW Storage Unit-HW Inventory	Waste Mercury Debris (Micro)	Micro-encapsulation	WM Emelle	100	Drums	\$ 291.00	CH Contract Pricing; \$0.97 / lb; 300 lb / drum; validated by All Source/ NSEC	\$ 29,100.00
HW Storage Unit-HW Inventory	Waste Mercury Containing Devices	Retort Processing	WM Emelle	85	Drums	\$ 2,315.00	CH Contract Pricing; \$4.63 / lb; 500 lb / drum; validated by All Source/ NSEC	\$ 196,775.00
HW Storage Unit-HW Inventory	Waste Mercury Contaminated Soil	Micro-encapsulation	WM Emelle	20	Drums	\$ 485.00	CH Contract Pricing; \$0.97 / lb; 500 lb / drum; validated by All Source/ NSEC	\$ 9,700.00
HW Storage Unit-HW Inventory	COD Vials	Retort Processing	WM Emelle	5	Drums	\$ 2,315.00	CH Contract Pricing; \$4.63 / lb; 500 lb / drum; validated by All Source/ NSEC	\$ 11,575.00
HW Storage Unit-HW Inventory	Mercury Compound Lab Packs	Retort Processing	WM Emelle	14	Drums	\$ 2,315.00	CH Contract Pricing; \$4.63 / lb; 500 lb / drum; validated by All Source/ NSEC	\$ 32,410.00
HW Storage Unit-HW Inventory	Elemental Mercury DOE Storage	Storage	Bethlehem Apparatus	10	MT	\$ 69,301.50	DOE Storage; 12/23/2019 Factor with 3.5% Annual Escalation; Retained methodology; Likely to Recycle via Bethlehem Apparatus per NSEC	\$ 693,014.96
HW Storage Unit-Closure Debris	Waste Mercury Debris (Retort)	Retort Processing	WM Emelle	3	Drums	\$ 2,315.00	CH Contract Pricing; \$4.63 / lb; 500 lb / drum; validated by All Source/ NSEC	\$ 6,945.00
HW Storage Unit-Closure Debris	Waste Mercury Debris (Micro)	Micro-encapsulation	WM Emelle	30	Cubic Yards	\$ 420.38	CH Contract Pricing; \$420.38/yd3; validated by All Source/ NSEC	\$ 12,611.40
HW Storage Unit-Closure Debris	Non-Hazardous Debris	Non-Hazardous Landfill/Disposal	Local Advanced Disposal Landfill	30	Cubic Yards	\$ 135.31	CH Contract Pricing; \$135.31/yd3; validated by All Source/ NSEC	\$ 4,059.30
HW Storage Unit-Closure Debris	Non-Hazardous Decontamination Solutions	Treatment	Local Advanced Disposal Landfill	12	Drums	\$ 184.80	CH Contract Pricing; \$3.36/gallon; validated by All Source/ NSEC	\$ 2,217.60
HW Storage Unit-Closure Debris	Drum Mercury Waste Transportation	Transportation - Truck	Transit Vendor	327	Drums	\$ 54.13	Quoted NSEC Emelle, AL transit trip and handling charge of \$11,000; amortized across 204 drums per shipment, 80% utilization of space estimated	\$ 17,701.77
HW Storage Unit-Closure Debris	Bulk Mercury Waste Transportation	Transportation - Truck	Transit Vendor	30	Cubic Yards	\$ 244.44	Quoted NSEC Emelle, AL transit trip and handling charge of \$11,000; amortized across 60 cubic yard per shipment; 75% utilization of space estimated	\$ 7,333.33
HW Storage Unit-Closure Debris	Elemental Mercury Transportation	Transportation - Truck	Transit Vendor	10	Metric Ton	\$ -	Quoted NSEC Hellertown, PA transit trip was \$11,000; Intentionally Blank; utilized DOE's fee structure in Elemental Mercury fee of \$1,230/MT for conservatism	\$ -
HW Storage Unit-Closure Debris	Drum Non-Haz Waste Transportation	Transportation - Truck	Transit Vendor	12	Drums	\$ 37.50	Quoted \$450 NSEC to Advanced Disposal; 1 Trip for load	\$ 450.00
HW Storage Unit-Closure Debris	Bulk Non-Haz Waste Transportation	Transportation - Truck	Transit Vendor	30	Cubic Yards	\$ 15.00	Quoted \$450 NSEC to Advanced Disposal; 1 Trip for load	\$ 450.00
Mercury Recover/Retort Operation	Waste Mercury Activated Carbon	Retort	WM Emelle	47	Drums	\$ 2,315.00	CH Contract Pricing; \$4.63 / lb; 500 lb / drum; validated by All Source/ NSEC; validated by All Source/ NSEC	\$ 108,805.00
Mercury Recover/Retort Operation	Waste Closure Debris (Micro)	Micro-encapsulation	WM Emelle	60	Cubic Yards	\$ 420.38	CH Contract Pricing; \$420.38/yd3; validated by All Source/ NSEC; validated by All Source/ NSEC	\$ 25,222.80
Mercury Recover/Retort Operation	Non-Hazardous Debris	Non-Hazardous Landfill/Disposal	Local Advanced Disposal Landfill	30	Cubic Yards	\$ 135.31	CH Contract Pricing; \$135.31/yd3; validated by All Source/ NSEC; validated by All Source/ NSEC	\$ 4,059.30
Mercury Recover/Retort Operation	Hazardous Decontamination Solutions	Treatment	WM Emelle	12	Drums	\$ 254.65	CH Contract Pricing; \$4.63/gallon; validated by All Source/ NSEC; validated by All Source/ NSEC	\$ 3,055.80
Mercury Recover/Retort Operation	Hazardous Condensate Water (P10/P11)	Treatment	WM Emelle	6	Drums	\$ 254.65	CH Contract Pricing; \$4.63/gallon; validated by All Source/ NSEC; validated by All Source/ NSEC	\$ 1,527.90
Mercury Recover/Retort Operation	Hazardous Condensate Water (P14)	Treatment	WM Emelle	3	Drums	\$ 254.65	CH Contract Pricing; \$4.63/gallon; validated by All Source/ NSEC; validated by All Source/ NSEC	\$ 763.95
Mercury Recover/Retort Operation	Drum Mercury Waste Transportation	Transportation - Truck	Transit Vendor	68	Drums	\$ 54.13	Quoted NSEC Emelle, AL transit trip and handling; amortized across 204 drums per shipment, 80% utilization	\$ 3,681.10
Mercury Recover/Retort Operation	Bulk Mercury Waste Transportation	Transportation - Truck	Transit Vendor	60	Cubic Yards	\$ 244.44	Quoted NSEC Emelle, AL transit trip and handling; amortized across 60 cubic yard per shipment; 75% utilization	\$ 14,666.67
Mercury Recover/Retort Operation	Drum Non-Haz Waste Transportation	Transportation - Truck	Transit Vendor	6	Drums	\$ 75.00	Quoted \$450 NSEC to Advanced Disposal; 1 Trip for load	\$ 450.00
Mercury Recover/Retort Operation	Bulk Non-Haz Waste Transportation	Transportation - Truck	Transit Vendor	12	Cubic Yards	\$ 37.50	Quoted \$450 NSEC to Advanced Disposal; 1 Trip for load	\$ 450.00
Outdoor Emission Control Equipment	Waste Mercury Activated Carbon	Retort Processing	WM Emelle	55	Drums	\$ 2,315.00	CH Contract Pricing; \$4.63/lb; 500 lb/drum; validated by All Source/NSEC	\$ 127,325.00
Outdoor Emission Control Equipment	Waste Closure Debris (Micro)	Micro-encapsulation	WM Emelle	10	Cubic Yards	\$ 420.38	CH Contract Pricing; \$420.38/yd3 validated by All Source/ NSEC; validated by All Source/ NSEC	\$ 4,203.80
Outdoor Emission Control Equipment	Non-Hazardous Debris	Non-Hazardous Landfill/Disposal	Local Advanced Disposal Landfill	15	Cubic Yards	\$ 135.31	CH Contract Pricing; \$135.31/yd3 validated by All Source/ NSEC; validated by All Source/ NSEC	\$ 2,029.65
Outdoor Emission Control Equipment	Hazardous Decontamination Solutions	Treatment	WM Emelle	12	Drums	\$ 254.65	CH Contract Pricing; \$4.63/gallon validated by All Source/ NSEC; validated by All Source/ NSEC	\$ 3,055.80
Outdoor Emission Control Equipment	Hazardous Condensate Water	Treatment	WM Emelle	10	Drums	\$ 254.65	CH Contract Pricing; \$4.63/gallon validated by All Source/ NSEC; validated by All Source/ NSEC	\$ 2,546.50
Outdoor Emission Control Equipment	Drum Mercury Waste Transportation	Transportation - Truck	Transit Vendor	77	Drums	\$ 54.13	Quoted NSEC Emelle, AL transit trip and handling charge of \$11,000; amortized across 204 drums per shipment, 80% utilization of space estimated	\$ 4,168.31
Outdoor Emission Control Equipment	Bulk Mercury Waste Transportation	Transportation - Truck	Transit Vendor	10	Cubic Yards	\$ 244.44	Quoted NSEC Emelle, AL transit trip and handling charge of \$11,000; amortized across 60 cubic yard per shipment; 75% utilization of space estimated	\$ 2,444.44
Outdoor Emission Control Equipment	Drum Non-Haz Waste Transportation	Transportation - Truck	Transit Vendor	10	Drums	\$ 45.00	Quoted \$450 NSEC to Advanced Disposal; 1 Trip for load	\$ 450.00
Outdoor Emission Control Equipment	Bulk Non-Haz Waste Transportation	Transportation - Truck	Transit Vendor	12	Cubic Yards	\$ 37.50	Quoted \$450 NSEC to Advanced Disposal; 1 Trip for load	\$ 450.00
Facility Wide	Decontamination Services	Closure and Decontamination Services	NSEC	1	Each	\$ 775,000.00	NSEC 03182025 Quotation of \$575-775,000 Utilizing Conservative Estimates & Closure Experience From WM Closure	\$ 775,000.00
Facility Wide	Air Monitoring	IH Analysis	Industrial Hygienist	30	Samples	\$ 519.00	WI Occupational Health Lab Rate of \$54/sample; 3 hours per sample inclusive of mobilization and analysis at Industrial Hygienist Rate of \$155/hour	\$ 15,570.00
Facility Wide	Wipe Analysis	IH Analysis	Industrial Hygienist	120	Samples	\$ 224.00	WI Occupational Health Lab Rate of \$69/sample; 1 hours per sample inclusive of mobilization and reporting at Industrial Hygienist Rate of \$155/hour	\$ 26,880.00
Facility Wide	Engineer's Closure Planning and Report	Engineering Support	Professional Engineer	120	Hours	\$ 185.00	Endpoint Solutions Schedule of Fees for Principal Engineer	\$ 22,200.00
Facility Wide	Closure Management and Oversight	Management & Oversight	Engineering Project Manager	160	Hours	\$ 170.00	Endpoint Solutions Estimated Scope and Schedule of Fees average for Principal Engineer (\$185) & Project Manager (\$155)	\$ 27,200.00
Facility Closure Contingency	10% Closure Contingency	Contingency Reserve	Contingency Reserve	10	%	-	Percentage of direct closure costs added for unforeseen requirements per Closure Cost Guidance	\$ 233,197.44
Total								\$ 2,565,171.82

APPENDIX C

MARCH 18, 2025 NSEC PROPOSAL FOR CLOSURE SERVICES



March 18, 2025

Mr. Alex Mentzer
Endpoint Solutions Corp.
6871 S. Lovers Lane
Franklin, WI 53132

Re: Proposal for the facility closure of Veolia's mercury process equipment and associated requirements for WDNR approved closure.

Dear Mr. Mentzer:

North Shore Environmental Construction Inc (NSEC) is providing this proposal for the estimated cost associated with the closure of the facility. Based on a similar facility closure and working with the WDNR this mimics the closure requirements for mercury.

NSEC anticipates level B ppe when performing work inside the retort ovens and condensers. Level C ppe will be used for all other work assuming air levels can be controlled.

Task 1 – Retort Ovens, condensers, rails, trays, and carts.

SCOPE OF WORK

Complete pre-project paperwork (i.e., safety plans, work plans, profiles, etc.)
Mobilize to the project site.
Meet with client's authorized representative.
Complete client's site-specific training (if required).
Supply 40-hour OSHA hazwoper personnel.
Mobilize resources to the site.
Hold on site safety meeting.
Setup work zones.
Setup decontamination zone.
Don level B ppe while in ovens and condensers
Remove insulation.
Remove refractory brick and inner workings and place in containers
Remove all visible mercury
Size and place ovens and associated equipment into macro containers.

Task 2 – Bulb crushing machine

SCOPE OF WORK

Complete pre-project paperwork (i.e., safety plans, work plans, profiles, etc.)
Mobilize to the project site.
Meet with client's authorized representative.
Complete client's site-specific training (if required).
Supply 40-hour OSHA hazwoper personnel.
Mobilize resources to the site.
Hold on site safety meeting.
Setup work zones.
Setup decontamination zone.
Don proper ppe as air readings dictate.
Remove dust from the machine.
Disassemble and place into macro containers

Task 3 – Duct work

SCOPE OF WORK

Complete pre-project paperwork (i.e., safety plans, work plans, profiles, etc.)
Mobilize to the project site.
Meet with client's authorized representative.
Complete client's site-specific training (if required).
Supply 40-hour OSHA hazwoper personnel.
Mobilize resources to the site.
Hold on site safety meeting.
Setup work zones.
Setup decontamination zone.
Don proper ppe as air readings dictate.
Remove all mercury from the duct work.
Remove and size ductwork for placement into the macro containers.

Task 4 Cleaning of floors, ceiling and walls with HGCS 102 application

This is for pressure washing all ceiling and wall surfaces throughout the facility not previously completed and minus the office area. This would require a complete electrical disconnect for the entire facility to allow washing around electrical equipment and wiring. The entire facility would be lightly pressure washed and the rinsewater collected.

From manlifts, everything would be washed with a top-down approach. Ground personnel would squeegee the water for collection.. Overhead doorways would have containment berms placed along them to contain the rinse water within the facility.

Following the initial wash, the facility would be sprayed with a solution of HGCS 102 mercury cleaner/coagulator and left to dry. Once dry, the facility would be given an additional rinse with pressure washers to remove any residue left by the cleaning agent and again left to dry before reconnecting the facility to power.

COST

Rates are for weekday only and are portal to portal from Germantown, WI. All pricing includes fees, taxes, and surcharges. NSEC estimates that the range of cleaning could take several weeks

Estimated range \$ 575.000.00 - \$775.000.00

SPECIAL TERMS AND CONDITIONS

Proposal is valid for 30 days.

Customer to supply utilities

Purchase order signed proposal or other form of acknowledgement prior to starting work.

Customer to keep site accessible to NSEC

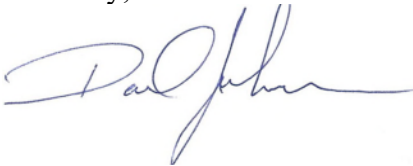
NSEC reserves the right to stop the work if safety of our personnel is in jeopardy.

Should the scope of the project change then written authorization will be required prior to beginning any new work.

Payment terms are net 30 days.

If you have any questions or need additional information, please contact me at (262) 255-4468.

Sincerely,

A handwritten signature in blue ink, appearing to read 'David Johnson', with a stylized, flowing script.

David Johnson
Executive Vice President

APPENDIX D

PROFESSIONAL ENGINEER'S SUMMARY OF CERTIFICATION

SUMMARY OF CERTIFICATION

I, Alex J. Mentzer, a Registered Professional Engineer in the State of Wisconsin, have prepared and assessed the proposed Wisconsin Administrative Code NR 664.0142 conforming Cost of Closure Estimate for the existing Veolia North America hazardous waste management facility located at 1275 Mineral Springs Drive in Port Washington, Wisconsin.

I certify that to the best of my knowledge and based upon best engineering practices, physical observations and assessments of the facility conditions, a review of facility details and specifications and based on the communicated operational information disclosed by facility personnel, these estimated costs were prepared utilizing all requirements of NR 664.0112(1)(a-d) and reflect an appropriate estimate of closure costs described therein.

Alex J. Mentzer, P.E.
Project Manager
P.E. Number 45665-6



Appendix R

Waste Minimization Plan

**WASTE MINIMIZATION PLAN
FOR
VEOLIA ES TECHNICAL SOLUTIONS, L.L.C.
1275 MINERAL SPRINGS DRIVE
PORT WASHINGTON, WI 53074
WID 988566543**

Veolia ES Technical Solutions, L.L.C. (VESTS) operates a Resource Conservation and Recovery Act (RCRA) permitted hazardous waste storage facility (TSDF), EPA I.D. WID 988566543 and Wisconsin Department of Natural Resources (WDNR) FID# 246076050, located at 1275 Mineral Springs Drive, Port Washington, Wisconsin. The TSDF primarily operates as destination facility for the recycling of universal waste including mercury containing lamps and mercury containing devices. The TSDF also operates four mercury recovery furnaces (retorts) to recover elemental mercury from the lamps, devices and hazardous waste debris containing mercury.

Sections 3002(b) and 3005(h) of RCRA require hazardous waste generators and owners of TSDFs to have a waste minimization program in place. The purpose of this document is to outline VESTS Mineral Springs Drive facility's waste minimization program. The key elements of a waste minimization program include the following:

- Top Management Support
- Characterization of Waste Generation and Waste Management Costs
- Periodic Waste Minimization Assessments
- Cost Allocation System
- Encouraging Technology Transfer
- Program Implementation and Evaluation

The Waste Minimization Plan (Plan) is supported by the facility's Environmental Management System (EMS), which has been developed and certified in accordance with requirements of ISO 14001-2004.

1.0 Top Management Support

Veolia North America (VNA) management's commitment to waste minimization is best depicted in the company's overall mission to the environment through our Environmental Policy Statement, which is "Resourcing the World". The Policy is attached to this Program. The Policy outlines the principal aspects of the mission, including VNA's commitment to environmental compliance, environmental preservation. This commitment to environmental preservation supports VNA's efforts to actively recycle, reuse and eliminate waste, which supports this Plan. In addition, VESTS senior management commitment to the environment and waste minimization is outlined in Environmental Policy E-008.

2.0 Characterization of Waste Generation and Waste Management Costs

The TSDF allows for the economical management of a wide variety of hazardous waste for primarily industrial clientele. The TSDF's Feasibility and Plan of Operation Report (FPOR) contains a section entitled "Waste Analysis Plan" (WAP) that outlines the procedures the TSDF will take to properly characterize and accept waste streams from the clientele. Once the waste stream has arrived at the facility, representative samples are taken and analyzed to confirm the waste conforms to the pre-acceptance profile information.

The by-product wastes from recycling activities are segregated based on the physical and chemical properties. These by-product wastes are managed to minimize the amount of waste requiring disposal. Examples of waste streams destined for recycling instead of disposal include:

- Recycling of cardboard, wooden pallets, stretch-wrap and plastic pail.
- Recycling of various metals and metal drums.
- Recycling of aluminum end-caps from fluorescent lamp recycling.
- Alternative reuse of silica glass for lamps for abrasive media.
- Recovery of metals from Compact Fluorescent Lamp (CFL) bases.
- Recovery of mercury from lamp phosphor powder.
- Recovery of rare earth elements from post-retort phosphor powder.
- Recovery and resale of mercury from articles, devices and debris.
- Recycling of oils.

VESTS also evaluates the costs for managing the wastes. As part of a publicly traded company, VESTS is always looking to reduce costs and thereby increase profits. However, VESTS considers long-term liability and potential environmental impacts when considering waste material management alternatives. In order to protect the long-term liability of the company, all final disposal sites must be audited and approved in accordance with corporate policies and procedures.

3.0 Periodic Waste Minimization Assessments

As part of the TSDF's ISO 14001 program, the potential environmental impacts of the facility are reviewed on an annual basis. As part of this review, each impact is reviewed as a possible target for improvement. In addition, as part of our New Technology Review Program, environmental impacts are reviewed. The review includes the following elements:

- Identifying opportunities at all points in a process where materials can be prevented from becoming a waste,
- Evaluating material substitution opportunities to reduce the toxicity of waste generation,
- Evaluating operational changes to reduce waste generation,
- Educational outreach programs to assist in our waste minimization activities, and

- Analyzing waste stream opportunities based on the true costs associated with waste management and cleanup.

These reviews are documented as part of the EHS. Some examples of past waste minimization activities have included the following;

- Installation of a breathing air system for respiratory protection instead of generating respirator cartridges.
- Segregation and recycling of stretch wrap.
- Recycling of plastic pails.
- Replacement of chiller unit for retort operation to use non-ozone depleting refrigerant.
- Upgrading lighting in the facility to higher energy efficient fixtures.

4.0 Cost Allocation System

VESTS allocates the true cost of disposal to the specific activities responsible for generating the waste as opposed to lumping all waste disposal-related expenses into “overhead” This costs are review monthly as part of the overall profit/loss evaluation for the facility.

While we can manage our cost of internally generated wastes, these costs can be directly proposal to the amount of waste received from our customers.

5.0 Encouraging Technology Transfer

The VESTS Mineral Springs facility is one of four (4) similar locations operating by VESTS across the United States. These facilities routinely share technology to improve operating efficiencies and opportunities for waste minimization. In addition, VESTS is a member of the Association of Lighting and Mercury Recyclers (ALMR), which meets several times per year and discuss the overall technology and marketplace trends.

VE has a large technology research group located in France who can support pilot program testing and contributes initiative technology to the world-wide operations. If our customers inquire about potential waste minimization, waste reuse or waste recycling opportunities, VESTS can use this resource to provide a solution. The customer may also be encouraged to seek technical waste minimization information from trade associations, government or university assistance programs, and other clearinghouses.

6.0 Program Implementation and Evaluation

As previously discussed this Plan is support by the efforts of the ISO 14001 EMS Program. The implementation and evaluation is principally completed by the EHS Council and the Operations Manager. Implementation of any suggestions and specific targets and objectives will be documented in accordance with the EMS. This Plan will be reviewed on an annual basis ensure the execution of the Plan and update the Plan as necessary.



VEOLIA NORTH AMERICA Environmental Policy Statement

As the global leader in optimized resource management providing solutions in water, waste and energy management, Veolia North America is committed to sustainable development and environmental stewardship. Serving municipal, commercial and industrial customers throughout North America, our environmental policy reflects our responsibility and our challenge toward “Resourcing the World” – reinforcing our unique ability to support an interconnected world with limited resources and growing needs.

Environmental compliance and preservation is a commitment shared by all employees at all levels of the organization and as such, is a condition of employment.

We commit to maintain compliance with all applicable environmental laws, regulations and contractual requirements.

We utilize policies, procedures, standards and systems to ensure proper management of our environmental aspects and impacts to reduce and control pollution and to meet our continual improvement expectation.

We operate under the premise that sustainability is about continuing to grow and prosper while preserving natural resources. This includes being selective in our choice of products, processes and services to ensure that our supply chain reflects our commitment to sustainability. We embrace continual improvement and when safer and more environmentally sound methods are identified, we

will move promptly to adopt these practices in a responsible manner whenever possible.

We ensure our employees receive necessary and required training regarding relevant environmental matters and activities. We promote a heightened level of awareness at all times and **a culture of inclusion for proposing, setting and achieving our environmental and sustainability goals, objectives and targets.**

We communicate our environmental commitment to our employees, customers, industry associates, suppliers and the general public.

We count on your commitment, support and involvement.

Veolia North America supports and conforms to the Veolia Sustainable Development Charter, Environmental Policy and Ethics Guide.

We endeavor to actively recycle, reuse materials and eliminate waste to minimize environmental impacts and promote recovery of limited resources. These principles will be integrated into our business decisions.

We continuously improve our environmental performance through our environmental management system, technology innovations, process optimization, due diligence and the exchange of global best practices.

Terry Mah, VNA CEO and President

Steve Hopper, VNA President and COO – Industrial

William DiCroce, VNA President and COO – Municipal & Commercial



signed on June 13, 2014

Appendix S
Not Needed for 2025 FPOR Renewal
(Solid Waste Management Processing Facility Plan of Operation)

Appendix T

Storage Room Information

Facility Photos
Storage Room Layout


		Photographic Log
Client's Name: Veolia ES Technical Solutions, LLC	Site Location: Port Washington, WI	Project No. 24V007

Photo No. 1	Date: 3/24/2025	
Direction Photo Taken:		
Photo Taken By: EMW1		
Description: Front sign		

Photo No. 2	Date: 3/24/2025
Direction Photo Taken:	
Photo By: EMW1	
Description: Front gate – facing west	



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

Photo No. 3	Date: 3/24/2025	
Direction Photo Taken:		
Photo By: EMW1		
Description: Front gate security – facing south		

Photo No. 4	Date: 3/24/2025	
Direction Photo Taken:		
Photo By: EMW1		
Description: Truck parking – facing south		

Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

Photo No. 5	Date: 3/24/2025	
Direction Photo Taken:		
Photo By: EMW1		
Description: Truck parking – facing east		

Photo No. 6	Date: 3/24/2025	
Direction Photo Taken:		
Photo By: EMW1		
Description: Trucking parking – facing east		

Client's Name: Veolia ES Technical Solutions, LLC	Site Location: Port Washington, WI	Project No. 24V007
----------------------------------------------------------------	----------------------------------------------	------------------------------


Photo No. 7	Date: 3/24/2025	
Direction Photo Taken:		
Photo By: EMW1		
Description: South side of building – facing north – including loading docks		

Photo No. 8	Date: 3/24/2025	
Direction Photo Taken:		
Photo By: EMW1		
Description: Loading dock – facing east		

Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
9

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

West side of building
– facing east –
including air pollution
control equipment



**Photo
No.**
10

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Air pollution control
equipment – facing
south



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
11

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Air pollution control
equipment – facing
south



**Photo
No.**
12

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Pond – facing
north/northeast –
taking from air
pollution control
mezzanine



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
13

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

North side of building
– facing south,
empty totes



**Photo
No.**
14

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

East side of building
– facing west



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
15

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

East side of building
– facing west
generator



**Photo
No.**
16

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

East side of building
– facing west



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
17

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

East side of building
– facing west



**Photo
No.**
18

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Security gate –
facing east



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
19

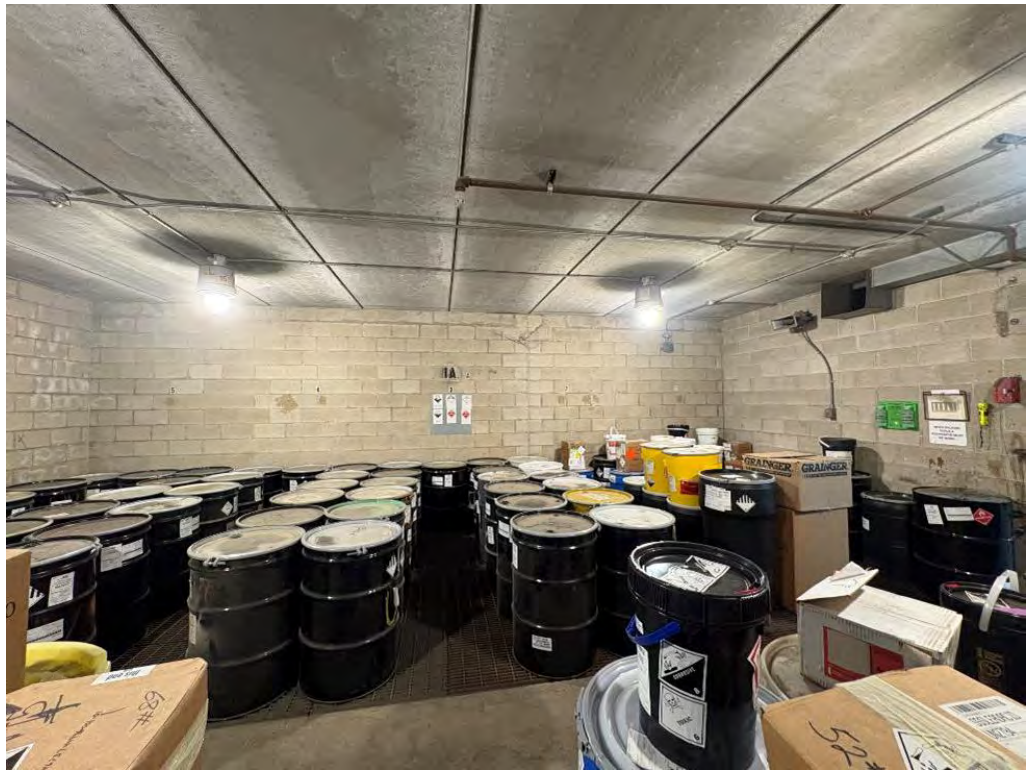
Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Storage Pods 1A, 1B,
1C, and containment
– facing south



**Photo
No.**
20

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Storage Pods 1A, 1B,
1C – facing north



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
21

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Storage Pods 1A, 1B,
1C – facing east



**Photo
No.**
22

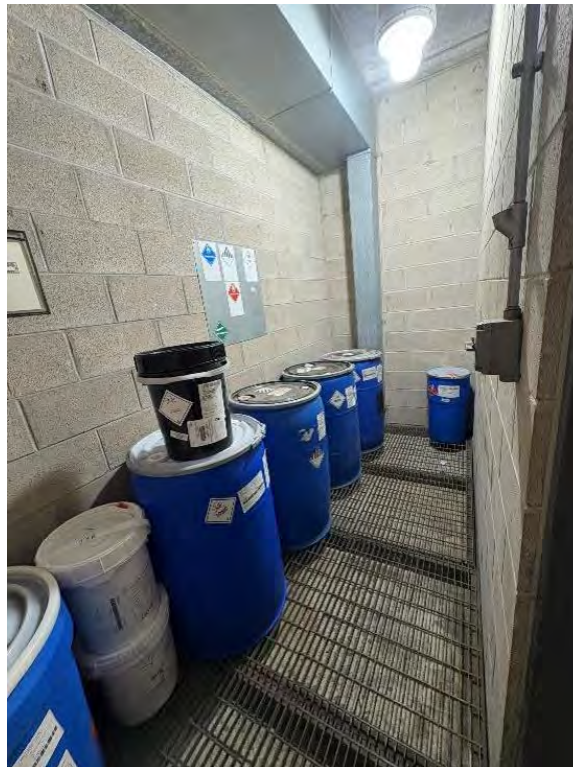
Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Storage Pods 1A, 1B,
1C sub-room &
containment – facing
east



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
23

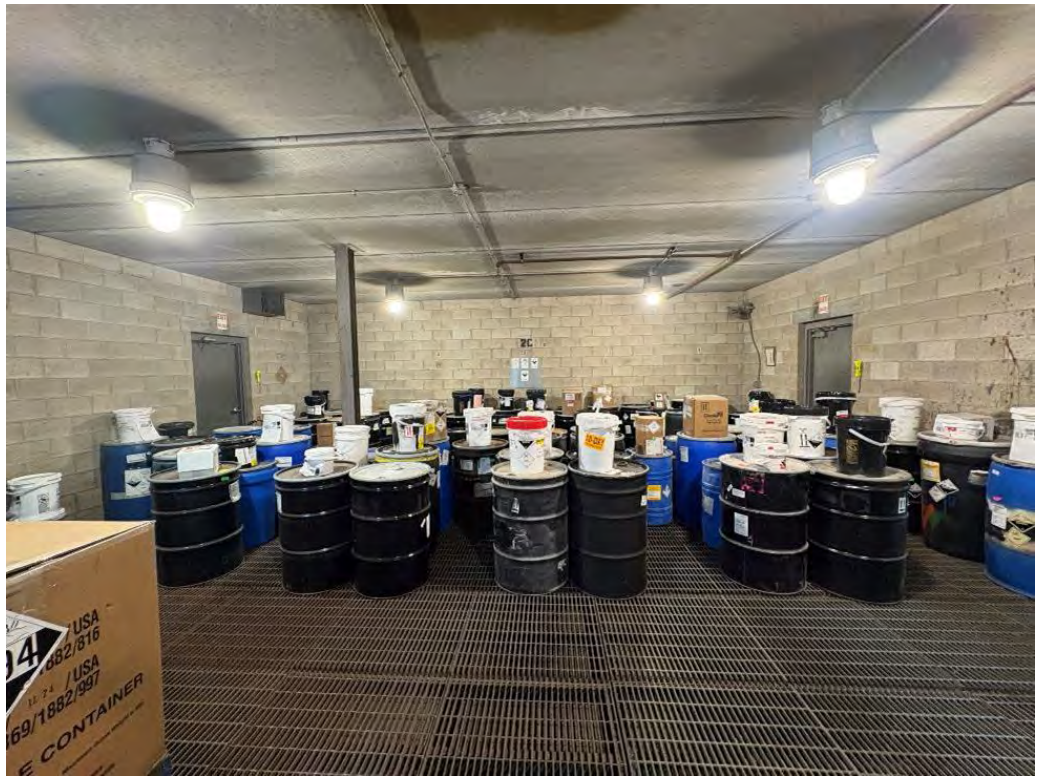
Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Storage Pods 2A, 2B,
and 2C – facing east



**Photo
No.**
24

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Storage Pods 2A, 2B,
and 2C – facing south



Client's Name: Veolia ES Technical Solutions, LLC	Site Location: Port Washington, WI	Project No. 24V007
----------------------------------------------------------------	----------------------------------------------	------------------------------



Photo No. 25	Date: 3/24/2025	
Direction Photo Taken:		
Photo By: EMW1		
Description: Storage Pods 2A, 2B, and 2C containment – facing south		

Photo No. 26	Date: 3/24/2025	
Direction Photo Taken:		
Photo By: EMW1		
Description: Storage Pods 2A, 2B, and 2C – facing west		

Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
27

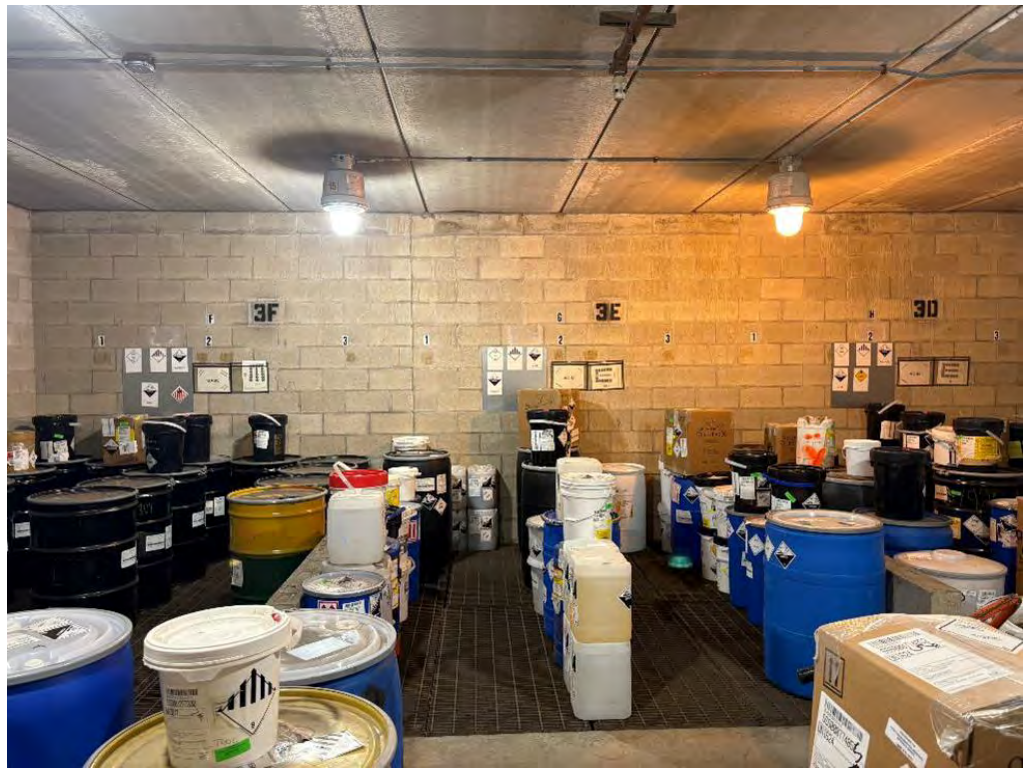
Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Storage Pods 3A, 3B,
3C, 3E, and 3F –
facing north



**Photo
No.**
28

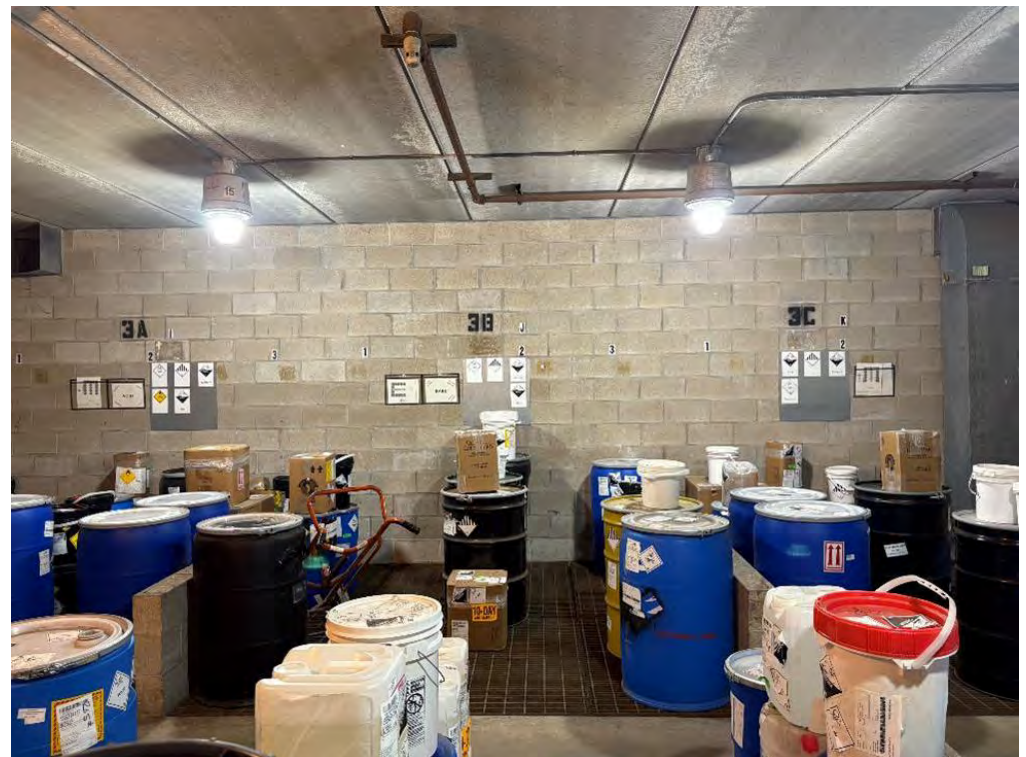
Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Storage Pods 3A, 3B,
3C, 3E, and 3F –
facing south



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
29

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Storage Pods 3A, 3B,
3C, 3E, and 3F
containment – facing
south



**Photo
No.**
30

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Storage Pods 3A, 3B,
3C, 3E, and 3F
containment – facing
north



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
31

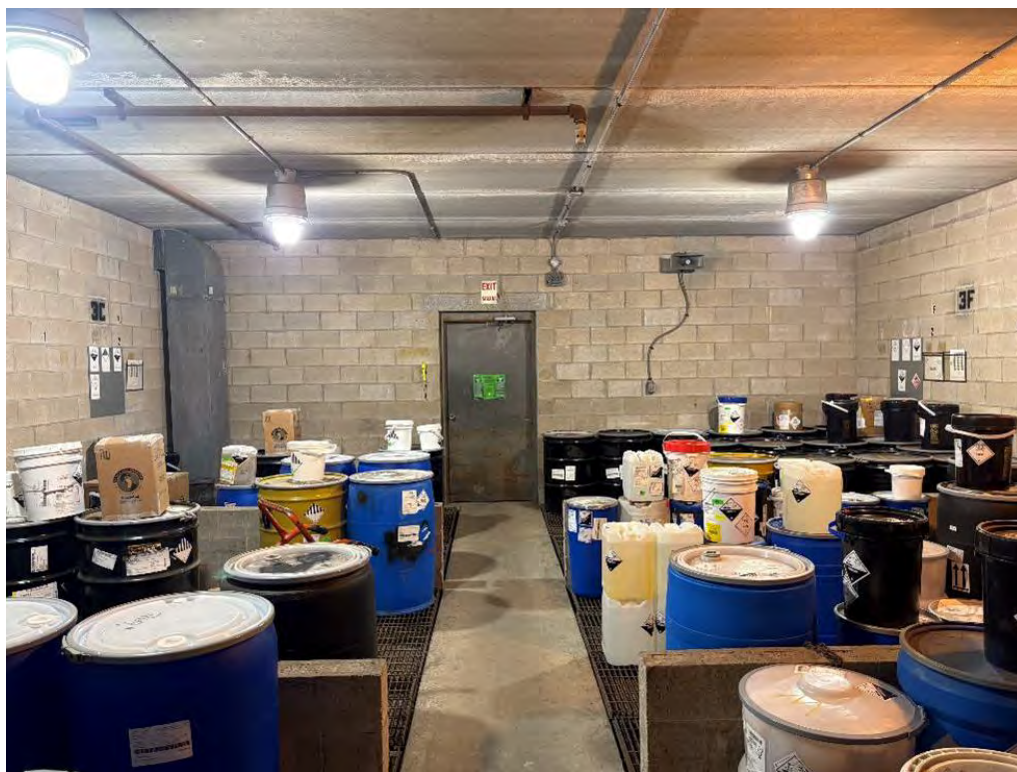
Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Storage Pods 3A, 3B,
3C, 3C, 3E, and 3F –
facing west



**Photo
No.**
32

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Storage Pods 3A, 3B,
3C, 3C, 3E, and 3F –
facing east



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
33

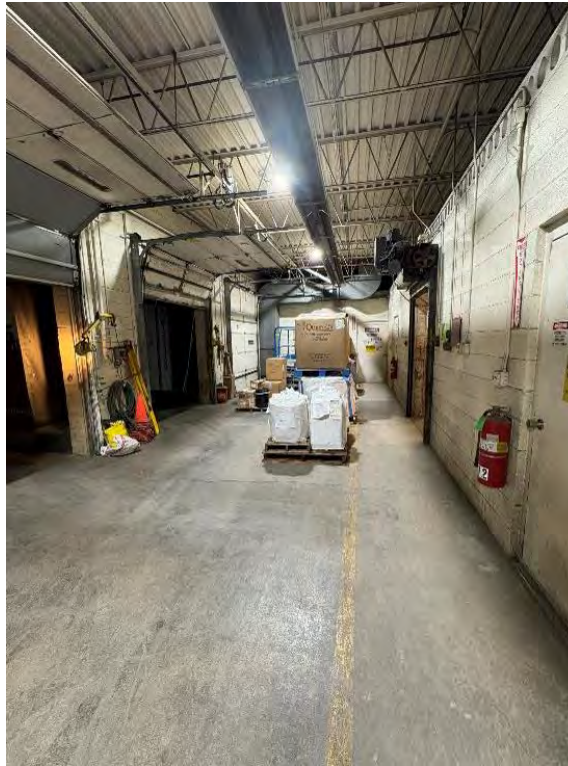
Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Loading docks -
facing west



**Photo
No.**
34

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Loading docks -
facing south



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
35

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
Amanda Rolbiecki

Description:

Retort System – S17
inside



**Photo
No.**
36

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
Amanda Rolbiecki

Description:

Retort System – S17
Wisco Oven



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
37

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
Amanda Rolbiecki

Description:

Retort System –
Condensers – S17
Wisco Oven



**Photo
No.**
38

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
Amanda Rolbiecki

Description:

Retort System – S13
S12



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
39

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
Amanda Rolbiecki

Description:

Retort System – S13
S12 Inside



**Photo
No.**
40

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
Amanda Rolbiecki

Description:

Retort System – S13
S12 inside



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
41

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Household
hazardous waste
area/90-day – facing
north



**Photo
No.**
42

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Lamp processing
area – facing north



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
43

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Lamp processing
area – facing east



**Photo
No.**
44

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Lamp processing
area – facing west



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
45

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Glass Collection Area
– facing south



**Photo
No.**
46

Date:
3/24/2025

**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Glass Collection Area
– facing north



Client's Name:
Veolia ES Technical Solutions,
LLC

Site Location:
Port Washington, WI

Project No.
24V007

**Photo
No.**
47

Date:
3/24/2025

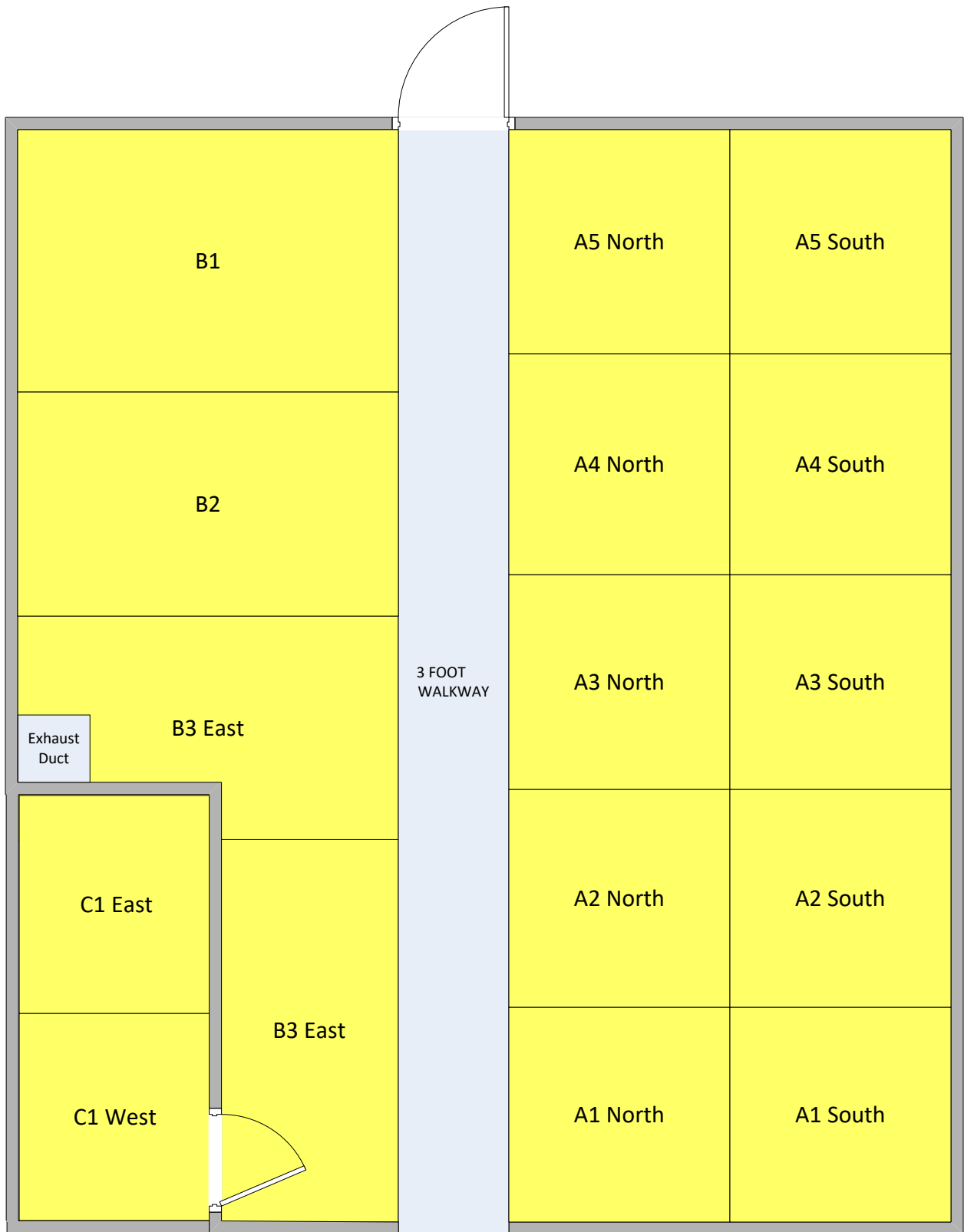
**Direction Photo
Taken:**

Photo By:
EMW1

Description:

Glass Collection Area
– facing west





Storage Pods 1A, 1B and 1C
March 2025



Storage Pods 2A, 2B and
2C
March 2025



Storage Pods 3A, 3B, 3C, 3D,
3E and 3F
March 2025

Appendix U

Surety Bond Minerals Springs

EPA ID #: 988566543

INCREASE RIDER TO SURETY BOND

PURPOSE: INCREASE

To be attached to Bond Number 853214 issued by Evergreen National Indemnity Company, as Surety in the amount of One Million Seven Hundred Seventy Thousand One Hundred Eighty and 10/100 Dollars (\$1,770,180.10) on behalf of Veolia ES Technical Solutions, L.L.C., in favor of the Wisconsin Department of Natural Resources, WI.

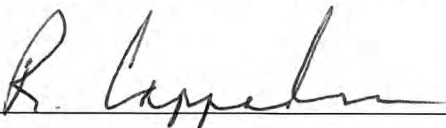
In consideration of the premium charged for the attached bond, it is mutually understood and agreed by the Principal and the Surety that the bond shall be modified to read as follows:

The above said bond amount shall be Two Million Two Hundred Thirty-Six Thousand Four Hundred Ninety-Seven and 51/100 Dollars (\$2,236,497.51), effective the 6th day August, 2024.

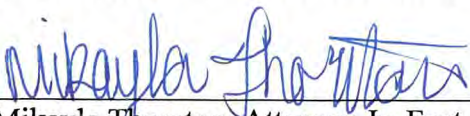
All other items, limitations and conditions of said bond except as herein expressly modified shall remain unchanged.

Signed, sealed and dated this 7th day of August, 2024.

Principal: **Veolia ES Technical Solutions, L.L.C.**

By: 

Surety: **Evergreen National Indemnity Company**

By: 
Mikayla Thornton, Attorney-In-Fact

EVERGREEN NATIONAL INDEMNITY COMPANY
Independence, Ohio

POWER OF ATTORNEY

Bond No. 853214

KNOW ALL MEN BY THESE PRESENTS: That the Evergreen National Indemnity Company, a corporation in the State of Ohio does hereby nominate, constitute and appoint:

Denise M Borowy, Julie K Bowers, Hilarie Frankenberry, Karen M LoConti-Diaz, Lillian Pezzano, Patricia A Temple, Mikayla Thornton

its true and lawful Attorney(s)-In-Fact to make, execute, attest, seal and deliver for and on its behalf, as Surety, and as its act and deed, where required, any and all bonds, undertakings, recognizances and written obligations in the nature thereof, PROVIDED, however, that the obligation of the Company under this Power of Attorney shall not exceed TEN MILLION AND 00/100 DOLLARS (\$10,000,000.00)

This Power of Attorney is granted and is signed by facsimile pursuant to the following Resolution adopted by its Board of Directors on the 23rd day of July, 2004:


"RESOLVED, That any two officers of the Company have the authority to make, execute and deliver a Power of Attorney constituting as Attorney(s)-in-fact such persons, firms, or corporations as may be selected from time to time.

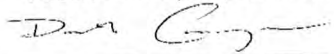
FURTHER RESOLVED, that the signatures of such officers and the Seal of the Company may be affixed to any such Power of Attorney or any certificate relating thereto by facsimile; and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be valid and binding upon the Company; and any such powers so executed and certified by facsimile signatures and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached."

IN WITNESS WHEREOF, the Evergreen National Indemnity Company has caused its corporate seal to be affixed hereunto, and these presents to be signed by its duly authorized officers this 1st day of April, 2024.

EVERGREEN NATIONAL INDEMNITY COMPANY



By: 
Robert W. Shepard, President

By: 
David A. Canzone, CFO

Notary Public)
State of Ohio)


SS:

On this 1st day of April, 2024, before the subscriber, a Notary for the State of Ohio, duly commissioned and qualified, personally came Robert W. Shepard and David A. Canzone of the Evergreen National Indemnity Company, to me personally known to be the individuals and officers described herein, and who executed the preceding instrument and acknowledged the execution of the same and being by me duly sworn, depose and said that they are the officers of said Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of said Company, and the said Corporate Seal and signatures as officers were duly affixed and subscribed to the said instrument by the authority and direction of said Corporation, and that the resolution of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal at Cleveland, Ohio, the day and year above written.



WILLIAM J. KOVAL, JR.
NOTARY PUBLIC - STATE OF OHIO
My commission has no expiration date.
Section 147.03 R.C.

By: 
William J. Koval, Jr., Notary Public
My commission has no expiration date
Section 147.03 R.C.


State of Ohio)

SS:

I, the undersigned, Secretary of the Evergreen National Indemnity Company, a stock corporation of the State of Ohio, DO HEREBY CERTIFY that the foregoing Power of Attorney remains in full force and has not been revoked; and furthermore that the Resolution of the Board of Directors, set forth herein above, is now in force.

Signed and sealed in Independence, Ohio, this 7th day of August, 2024.




Wan C. Collier, Secretary

Appendix V

Surety Bond Corrective Action Plan Update

EPA ID #: WID988566543

INCREASE RIDER TO SURETY BOND

PURPOSE: INCREASE

To be attached to Bond Number 871909 issued by Evergreen National Indemnity Company, as Surety in the amount of One Million Two Hundred Forty Two Thousand Six Hundred Eighty Four and 00/100 Dollars (\$1,242,684.00), on behalf of Veolia ES Technical Solutions, L.L.C., in favor of the Wisconsin Department of Natural Resources, WI.

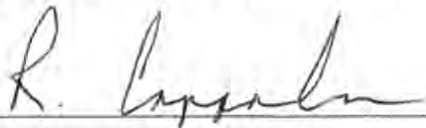
In consideration of the premium charged for the attached bond, it is mutually understood and agreed by the Principal and the Surety that the bond shall be modified to read as follows:

The above said bond amount shall be One Million Two Hundred Eighty-Seven Thousand Nine Hundred Seventeen and 69/100 Dollars (\$1,287,917.69), effective the 18th day May, 2024.

All other items, limitations and conditions of said bond except as herein expressly modified shall remain unchanged.

Signed, sealed and dated this 16th day of May, 2024.

Principal: **Veolia ES Technical Solutions, L.L.C.**

By: 

Surety: **Evergreen National Indemnity Company**

By: 
Julie K Bowers, Attorney-In-Fact

EVERGREEN NATIONAL INDEMNITY COMPANY

Independence, Ohio

POWER OF ATTORNEY

Bond No. 871909

KNOW ALL MEN BY THESE PRESENTS: That the Evergreen National Indemnity Company, a corporation in the State of Ohio does hereby nominate, constitute and appoint:

Denise M Borowy, Julie K Bowers, Hilarie Frankenberry, Karen M LoConti-Diaz, Lillian Pezzano, Patricia A Temple

its true and lawful Attorney(s)-In-Fact to make, execute, attest, seal and deliver for and on its behalf, as Surety, and as its act and deed, where required, any and all bonds, undertakings, recognizances and written obligations in the nature thereof, PROVIDED, however, that the obligation of the Company under this Power of Attorney shall not exceed TEN MILLION AND 00/100 DOLLARS (\$10,000,000.00)

This Power of Attorney is granted and is signed by facsimile pursuant to the following Resolution adopted by its Board of Directors on the 23rd day of July, 2004:

"RESOLVED, That any two officers of the Company have the authority to make, execute and deliver a Power of Attorney constituting as Attorney(s)-in-fact such persons, firms, or corporations as may be selected from time to time.

FURTHER RESOLVED, that the signatures of such officers and the Seal of the Company may be affixed to any such Power of Attorney or any certificate relating thereto by facsimile; and any such Power of Attorney or certificate bearing such facsimile signatures or facsimile seal shall be valid and binding upon the Company; and any such powers so executed and certified by facsimile signatures and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached."

IN WITNESS WHEREOF, the Evergreen National Indemnity Company has caused its corporate seal to be affixed hereunto, and these presents to be signed by its duly authorized officers this 1st day of April, 2024.

EVERGREEN NATIONAL INDEMNITY COMPANY



By: Robert W. Shepard, President

By: David A. Canzone, CFO

Notary Public)
State of Ohio)

SS:

On this 1st day of April, 2024, before the subscriber, a Notary for the State of Ohio, duly commissioned and qualified, personally came Robert W. Shepard and David A. Canzone of the Evergreen National Indemnity Company, to me personally known to be the individuals and officers described herein, and who executed the preceding instrument and acknowledged the execution of the same and being by me duly sworn, deposed and said that they are the officers of said Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of said Company, and the said Corporate Seal and signatures as officers were duly affixed and subscribed to the said instrument by the authority and direction of said Corporation, and that the resolution of said Company, referred to in the preceding instrument, is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my official seal at Cleveland, Ohio, the day and year above written.



WILLIAM J. KOVAL, JR.
NOTARY PUBLIC - STATE OF OHIO
My commission has no expiration date
Section 147.03 R.O.

By: William J. Koval, Jr., Notary Public
My commission has no expiration date
Section 147.03 R.C.

State of Ohio)

SS:

I, the undersigned, Secretary of the Evergreen National Indemnity Company, a stock corporation of the State of Ohio, DO HEREBY CERTIFY that the foregoing Power of Attorney remains in full force and has not been revoked; and furthermore that the Resolution of the Board of Directors, set forth herein above, is now in force.

Signed and sealed in Independence, Ohio, this 16th day of May, 2024.



Wan C. Collier
Wan C. Collier, Secretary

Appendix W
Not Needed for 2025 FPOR Renewal
(Storm Water NOI and Storm Water Pollution Prevention Plan)

Appendix X
Not Needed for 2025 FPOR Renewal
(Glass and Endcap Lab Analysis 2012-2014)

Appendix Y

Hazardous Waste Facility Certification of Liability Insurance

Effective date of this Endorsement: 01-Jan-2025

This Endorsement is attached to and forms a part of Policy Number: D1D5E9250901

Beazley Excess and Surplus Insurance, Inc. Referred to in this endorsement as either the "Insurer" or the "Underwriters"

ENDORSEMENT OF INSURANCE TO
DEMONSTRATE FINANCIAL RESPONSIBILITY FOR HAZARDOUS WASTE FACILITIES
STATE OF WISCONSIN

This endorsement modifies insurance provided under the following:

BEAZLEY ECLIPSE

In consideration of the premium charged for the Policy, it is hereby understood and agreed that:

Facility Name:

Veolia North America, Inc.

Address:

W124 N9451 Boundary Road, Menomonee Falls, WI 53051

1275 Mineral Springs Drive, Port Washington, WI 53074

Policy Number:

D1D5E9250901

Period of Coverage:

January 1, 2025 to January 1, 2026

Name of Insurer:

Beazley Excess and Surplus Insurance, Inc.

Address of Insurer:

65 Memorial Road, Suite 320, West Hartford, CT 06017

Name of Insured:

Veolia North America, Inc.

Address of Insured:

53 State Street, 14th Floor, Boston, MA 02109

1. This endorsement certifies that the policy to which the endorsement is attached provides liability insurance covering bodily injury and property damage in connection with the insured's obligation to demonstrate financial responsibility under s. NR 664.0147 or 665.0147, Wis. Adm. Code. The coverage applies at:

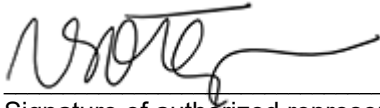
EPA Identification Number	Facility Name	Facility Address
W1D988566543	Veolia North America, Inc.	W124 N9451 Boundary Road, Menomonee Falls, WI 53051
WID003967148	Veolia North America, Inc.	1275 Mineral Springs Drive, Port Washington, WI 53074

for sudden and nonsudden. The limits of liability are \$4,000,000 each occurrence and \$8,000,000 annual aggregate, exclusive of legal defense costs.

2. The insurance afforded with respect to such occurrences is subject to all of the terms and conditions of the policy; provided, however, that any provisions of the policy inconsistent with subsections (a) through (e) of this Paragraph 2 are hereby amended to conform with subsections (a) through (e):
 - (a) Bankruptcy or insolvency of the insured may not relieve the Insurer of its obligations under the policy to which this endorsement is attached.
 - (b) The Insurer is liable for the payment of amounts within any deductible applicable to the policy, with a right of reimbursement by the insured for any payment made by the Insurer. This provision does not apply with respect to that amount of any deductible for which coverage is demonstrated as specified in s. NR 664.0147 (6) or 665.0147 (6), Wis. Adm. Code.
 - (c) Whenever requested by the Wisconsin Department of Natural Resources, the Insurer agrees to furnish to the Department a signed duplicate original of the policy and all endorsements.
 - (d) Cancellation of this endorsement, whether by the Insurer, the insured, a parent corporation providing insurance coverage for its subsidiary or by a firm having an insurable interest in and obtaining liability insurance on behalf of the owner or operator of the hazardous waste management facility, will be effective only upon written notice and only after the expiration of 60 days after a copy of the written notice is received by the Department, and if the facilities covered by this endorsement are in more than one state, each state agency regulating hazardous waste or the EPA Regional Administrator if the facility is located in an unauthorized state.
 - (e) Any other termination of this endorsement will be effective only upon written notice and only after the expiration of 30 days after a copy of the written notice is received by the Department, and if the facilities covered by this endorsement are in more than one state, each state agency regulating hazardous waste or the EPA Regional Administrator if the facility is located in an unauthorized state.

Attached to and forming part of policy No. W1D5E9240801 issued by Beazley Excess and Surplus Insurance, Inc. , herein called the Insurer, of 65 Memorial Road, Suite 320, West Hartford, CT 06017 to Veolia North America, Inc. of 53 State Street, 14th Floor, Boston, MA 02109 this 1st day of January, 2025. The effective date of said policy is 1st day of January, 2025.

I hereby certify that the wording of this endorsement is identical to the wording specified in s. NR 664.0151 (9), Wis. Adm. Code, as the rules were constituted on the date first above written, and that the Insurer is licensed to transact the business of insurance, or eligible to provide insurance as an excess or surplus lines insurer, in one or more States.

A handwritten signature in black ink, appearing to read 'V. Ortega', written over a horizontal line.

Signature of authorized representative of Insurer

Vanessa Ortega

Group Head of Operations, Authorized Representative of Beazley Excess and Surplus Insurance, Inc.
65 Memorial Road, Suite 320, West Hartford, CT 06017

Appendix Z
Not Needed for 2025 FPOR Renewal
(Surface Soil and Sediment Monitoring Plan, December 2015)

Appendix AA
Not Needed for 2025 FPOR Renewal
(2018 WDNR Remediation and Redevelopment Program Correspondence)

Appendix BB
Not Needed for 2025 FPOR Renewal
(WDNR Air Pollution Operating Permit Renewal No. 24607605 S01)

Appendix CC
Not Needed for 2025 FPOR Renewal
(2018 WDNR Air Management Correspondence)

Appendix DD

WDNR Bureau of Air Management Operation Permit No. 246076050-S02

AIR POLLUTION CONTROL OPERATION PERMIT

EI FACILITY NO: 246076050

OPERATION PERMIT NO.: 246076050-S02

TYPE: Revision of Operation Permit Number 246076050-S01

In compliance with the provisions of Chapter 285, Wis. Stats., and Chapters NR 400 to NR 499, Wis. Adm. Code,

Name of Source: Veolia ES Technical Solutions LLC

Street Address: 1275 Mineral Springs Drive

Port Washington, Ozaukee County, Wisconsin

Responsible Official, & Title: Steve Biermann, Operations Manager

is authorized to relocate and add control devices to flue stacks S12, S13, and S17 and to operate a facility for hazardous waste storage and recycling of mercury bearing wastes.

This operation permit does not expire and remains effective unless revised, suspended or revoked. The Department may revise the permit for cause under s. NR 407.14(1m)(f), Wis. Adm. Code, to establish an expiring term. [Section NR 407.09(1)(b)3., Wis. Adm. Code].

The conditions in this permit that originated in a construction permit are permanent and may only be revised through a revision of the construction permit condition, revision of a construction permit, or through the issuance of a new construction permit. [s. 285.66(1), Wis. Stats.]

Conditions of the permit marked with an asterisk (*) have been created outside of Wisconsin's federally approved State Implementation Plan (SIP) and are not federally enforceable.

This authorization requires compliance by the permit holder with the emission limitations, monitoring requirements and other terms and conditions set forth in all Parts hereof.

Dated at Waukesha, Wisconsin

March 25 2019

STATE OF WISCONSIN

DEPARTMENT OF NATURAL RESOURCES

For the Secretary

By

Kendra Fisher

Kendra Fisher, Environmental Engineer Supervisor

AIR POLLUTION CONTROL OPERATION PERMIT

EI FACILITY NO: 246076050

OPERATION PERMIT NO.: 246076050-S02

TYPE: Revision of Operation Permit Number 246076050-S01

In compliance with the provisions of Chapter 285, Wis. Stats., and Chapters NR 400 to NR 499, Wis. Adm. Code,

Name of Source: Veolia ES Technical Solutions LLC

Street Address: 1275 Mineral Springs Drive

Port Washington, Ozaukee County, Wisconsin

Responsible Official, & Title: Steve Biermann, Operations Manager

is authorized to relocate and add control devices to flue stacks S12, S13, and S17 and to operate a facility for hazardous waste storage and recycling of mercury bearing wastes.

This operation permit does not expire and remains effective unless revised, suspended or revoked. The Department may revise the permit for cause under s. NR 407.14(1m)(f), Wis. Adm. Code, to establish an expiring term. [Section NR 407.09(1)(b)3., Wis. Adm. Code].

The conditions in this permit that originated in a construction permit are permanent and may only be revised through a revision of the construction permit condition, revision of a construction permit, or through the issuance of a new construction permit. [s. 285.66(1), Wis. Stats.]

Conditions of the permit marked with an asterisk (*) have been created outside of Wisconsin's federally approved State Implementation Plan (SIP) and are not federally enforceable.

This authorization requires compliance by the permit holder with the emission limitations, monitoring requirements and other terms and conditions set forth in all Parts hereof.

Dated at Waukesha, Wisconsin

March 25 2019

STATE OF WISCONSIN

DEPARTMENT OF NATURAL RESOURCES

For the Secretary

By /s/ Kendra Fisher

Kendra Fisher, Environmental Engineer Supervisor

PREAMBLE TO OPERATION PERMIT

An Asterisk (*) throughout this document denotes legal authority, limitations and conditions which are not federally enforceable [Section NR 407.09(3)(b), Wis. Adm. Code.].

Historical Summary of Permits/Orders Issued to the Facility.

Permit/Order/Exemption Number	Issued/Approved	Sources covered and desc. ¹	Permit status
94-JSB-248	01/17/1995	S01, P01; S02, P02	Adopted by 94-JSB-248-OP
94-JSB-248-OP	05/19/1997	Total Facility	Renewed by 01-DJH-339-OP
01-DJH-339	06/06/2002	S08, P08; S14, P09, P10, P11, F99; Removal of P02	Adopted by 01-DJH-339-OP
03-DJH-236	09/09/2003	Exemption – P12	Superseded by 13-KB-181
01-DJH-339-OP	03/01/2005	Total Facility	Renewed by 246076050-S01
01-DJH-339-OP-R1	--	Revision-Minor	Reviewed under 246076050-S01
13-KB-181	11/11/2014	P14 and S17, Removal of P12	Adopted by 246076050-S01
246076050-S01	11/11/2014	Total Facility	To be Revised by 246076050-S02
246076050-S02	3/26/2019	S12, S13, S17 - Add controls C12, C13, C14, C15, C16, C17	Primary compliance document upon issuance

1 - Total Facility refers to all existing units at the facility at the time of issuance of the permit listed.

Stack and Process Index.

- a) P01: Model 2000 Lamp Recycler, equipped with a Donaldson -- Torit TD Cartridge Filter System (C01) and carbon adsorber (C02) and discharges to Stack S01. This unit has a capacity to process 2,500 four foot (T12 – 1.5” diameter) lamps per hour.
- b) P08: Model LSSI Lamp Recycler equipped with a HEPA PM Collector (C04) and carbon adsorber (C05) and discharges to Stack S08. This unit has a capacity to process 4,000 four foot (T12 – 1.5” diameter) lamps per hour.
- c) P10: RipSys Retort Oven equipped with electronic with electronic afterburner (C07) and carbon adsorber (C09) and discharges through process Stack S11 to retort room. Flue gas goes to flue Stack S12.
- d) P11: Magna Drum Retort Oven equipped with electronic afterburner (C08) and carbon adsorber (C09) and discharges through process Stack S11 to retort room. Flue gas goes to flue Stack S13.
- e) P14: Natural Gas fired Retort Oven equipped with a carbon adsorber (C11) and discharges through process Stack S15 to retort room. Flue gas discharges to flue stack S17.
- f) P13: Generac SD500 Emergency Generator (Diesel fuel fired) which discharges through Stack S16.
- g) S14: Retort room Stack equipped with a carbon adsorber (C10) controlling discharges from process Stacks S11 and S15, and F99 (fugitive emissions from retort room).

Insignificant Emissions Units.

Maintenance of Grounds, Equipment, and Buildings (lawn care, painting, etc.)
Boiler, Turbine, and HVAC System Maintenance
Pollution Control Equipment Maintenance
Internal Combustion Engines Used for Warehousing and Material Transport.

Fire Control Equipment
Janitorial Activities
Office Activities
Convenience Water Heating
Convenience Space Heating (< 5 million BTU/hr Burning Gas, Liquid, or Wood)
Fuel Oil Storage Tanks (< 10,000 gal.)
Sanitary Sewer and Plumbing Venting
S03: Consolidation of packaged laboratory chemicals
S03, S05, S06: Storage of hazardous waste in closed containers
S04: Loading Dock operations
S07: Laboratory Operations
S18, S19, S20 Stacks discharging non-contact cooling air from air to air heat exchangers

Permit Shield. Unless precluded by the Administrator of the US EPA, compliance with all emission limitations in this operation permit is considered to be compliance with all emission limitations established under ss. 285.01 to 285.87, Wis. Stats., and emission limitations under the federal clean air act, that are applicable to the source if the permit includes the applicable limitation or if the Department determines that the emission limitations do not apply.

The following emission limitations were reviewed in the analysis and preliminary determination and were determined not to apply to this stationary source:

None.

Title I Conditions. The Wisconsin Department of Natural Resource issues Air Pollution Control Operation Permits for sources of air pollution, as required by chapter NR 407, Wis. Adm. Code, and Title V of the Clean Air Act (Act). In addition to implementing the operation permit program, operation permits usually contain "Title I Conditions", i.e., conditions established under the permit programs for new and modified emission units, pursuant to chapters NR 405, 406, and 408, Wis. Adm. Code, and Title I of the Act. This operation permit contains Title I conditions that were established in previously issued permits. The specific conditions in this operation permit that were established under Title I of the Act are identified by citation to the Title I permit number. Conditions that originated as Title I conditions may only be revised through appropriate Title I actions.

Part I - The headings for the columns in the permit are defined below. The legal authority for the limitations or methods follows them in [brackets].

Limitations - This column lists all applicable emission limitations that apply to the source, including case-by-case limitations such as Latest Available Control Techniques (LACT), Best Available Control Technology (BACT), or Lowest Achievable Emission Rate (LAER). It also lists any voluntary restrictions on hours of operation, raw material use, or production rate requested by the permittee to limit potential to emit.

Compliance Demonstration - The compliance demonstration methods outlined in this column may be used to demonstrate compliance with the associated emission limit or work practice standard listed under the corresponding **Limitations** column. The compliance demonstration column contains limits on parameters or other mechanisms that must be monitored periodically to ensure compliance with the limitations. The requirement to test as well as initial and periodic test schedules, if testing is required, are stated here. Notwithstanding the compliance determination methods which the owner or operator of a source is authorized to use under ch. NR 439, Wis. Adm. Code, the Department may use any relevant information or appropriate method to determine a source's compliance with applicable emission limitations.

Reference Test Methods, Recordkeeping, and Monitoring Requirements - Specific US EPA Reference test methods or other approved test methods are contained in this column and are the methods that must be used whenever testing is required. A reference test method is listed even if no testing is immediately required. Also included in this column are any recordkeeping requirements, their frequency, and reporting requirements.

Accuracy of monitoring equipment shall meet, at a minimum, the requirements of s. NR 439.055(3) and (4), Wis. Adm. Code, as specified in Part II of this permit.

PART II - This section contains general limitations and standard conditions that all permittees must abide by. These requirements are included in this section with every permit.

Part I

A. Process P01; Control Device(s) C01, C02; Stack S01 – Model 2000 Lamp Recycler (constructed or last modified in 1993), Equipped with a Donaldson – Torit TD cartridge filter system (C01) and carbon adsorber (C02) and discharges to Stack S01.

1. Pollutant: Particulate Matter Emissions

a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
<p>(1) The particulate matter emissions from Stack S01 may not exceed 0.40 pounds of particulate matter per 1,000 pounds of gas.¹ [s. NR 415.05(1)(o), Wis. Adm. Code]</p> <p>(2) The ch. NR 415, Wis. Adm. Code allowable emissions of particulate matter are calculated by the use of the equation $E = 3.59 P^{0.62}$ for process weight rates up to 60,000 pounds per hour and by use of the equation $E = 17.31 P^{0.16}$ for process weight rates of 60,000 pounds per hour or more, where E is the allowable emissions in pounds per hour and P is the process weight rate in tons per hour. If the calculated emission rate is less restrictive than the applicable concentration specified under I.A.1.a.(1) based on the maximum exhaust flow rate and normal exhaust gas temperature, the limitation under I.A.1.a.(1) shall apply.¹ [s. NR 415.05(2), Wis. Adm. Code]</p>	<p>(1) The cartridge filter system (C01) shall be in line and shall be operated at all times when Process P01 is in operation. [s. NR 407.09(4)(a)1., Wis. Adm. Code]</p> <p>(2) The pressure drop across the cartridge filter system (C01) shall be within the range of 0.4 to 6.0 inches of water when Process P01 is in operation. [s. NR 439.11(4), Wis. Adm. Code]</p> <p>(3) The permittee shall maintain and follow a malfunction prevention and abatement plan for the cartridge filter system (C01) as required under I.ZZZ.1. [NR 439.11, Wis. Adm. Code]</p>	<p>(1) Whenever Process P01 is operating, the pressure drop across the cartridge filter system (C01) shall be measured and recorded a minimum of once for every 8 hours of source operation or once per day, whichever yields the greater number of measurements. The permittee shall keep these records for a period of five (5) years and make these records available to the Department personnel upon request any time during normal working hours. [s. NR 439.055(2)(b)1., Wis. Adm. Code]</p> <p>(2) A log shall be kept of all maintenance required on the cartridge filter system (C01), and the dates of filter replacements. [s. NR 439.04(1)(b), Wis. Adm. Code]</p>

¹The ch. NR 415, Wis. Adm. Code allowable emission limit for Particulate Matter Emissions which is based on the allowable limit under s. NR 415.05(1)(o), Wis. Adm. Code is equal to 0.72 lb/hr which is more restrictive than the value calculated using the process weight rate in s. NR 415.05(2), Wis. Adm. Code. The potential emission is a much lower value and is equal to 0.0055 lb/hr. The limitations from ss. NR 415.05(1)(o) and NR 415.05(2), Wis. Adm. Code have been listed based on current Departmental Policy.

A. Process P01; Control Device(s) C01, C02; Stack S01 – Model 2000 Lamp Recycler (constructed or last modified in 1993), Equipped with a Donaldson – Torit TD cartridge filter system (C01) and carbon adsorber (C02) and discharges to Stack S01.		
2. Pollutant: Hazardous Air Pollutants regulated by ch. NR 445 and ch. NR 446, Wis. Adm. Code: Mercury Emissions *		
a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
<p>(1) Mercury emissions exhausting Stack S01 may not exceed 0.00055 pounds per hour.² [s. NR 445.07(1)(a), Wis. Adm. Code; 13-KB-181] *</p> <p>(2) The Mercury concentration in the exhaust gas from Stack S01 may not exceed 0.3671 milligrams per cubic meter.² [s. 285.65(4), Wis. Stats.; 13-KB-181] *</p> <p>(3) The permittee shall maintain the following parameters for Stack S01 listed below:³</p> <p>(a) Stack S01 shall be at least 25 feet above ground level;</p> <p>(b) Stack S01 may not be equipped with a rainhat or any other device which impedes the upward flow of the exhaust gases. [s. 285.65(3), Wis. Stats.; 13-KB-181] *</p>	<p>(1) The carbon adsorber (C02) shall be in line and shall be operated at all times when Process P01 is in operation. [s. NR 407.09(4)(a)1., Wis. Adm. Code; 13-KB-181] *</p> <p>(2) The permittee shall maintain and follow a malfunction prevention and abatement plan for the cartridge filter system (C01) as required under I.ZZZ.1. [NR 439.11, Wis. Adm. Code]</p>	<p>(1) The mercury concentration in the exhaust gas shall be measured and recorded with a portable mercury vapor analyzer (Arizona Instruments, Jerome 431X, or equivalent) once per day while Process P01 is operating. [s. 285.65(10), Wis. Stats.; 13-KB-181] *</p> <p>(2) The permittee shall install and operate instrumentation to monitor the pressure drop across the carbon adsorber (C02) and prefilter in inches of water, and temperature within the carbon adsorber (C02) in degrees Fahrenheit or Celsius (centigrade) within two months after the effective date of this permit. [s. NR 439.055(1)(g), Wis. Adm. Code; 13-KB-181] *</p> <p>(3) Whenever Process P01 is operating, the permittee shall measure and record the pressure drop across the carbon adsorber (C02) once for every 8 hours of source operation or once per day, whichever yields the greater number of measurements, after a pressure drop range (lower and upper values in inches of water) that adequately represents the adsorber conditions has been established (which shall be done within six months after the effective date of this permit). The permittee shall keep these records for a period of five (5) years and make these records available to the Department personnel upon request any time during normal working hours. [s. NR 439.055(2)(b)1., Wis. Adm. Code; 13-KB-181] *</p> <p>(4) Reference Test Method for Mercury Emissions: Whenever compliance emission testing is required, the permittee shall use U.S. EPA Method 0012 or other methods and plans approved, in writing, by the Department. [s. NR 439.06(8), Wis. Adm. Code]</p> <p>(5) A log shall be kept of all maintenance required on the carbon adsorber (C02) and the dates of adsorber replacements. [s. NR 439.04(1)(b), Wis. Adm. Code; 13-KB-181] *</p> <p>(6) The permittee shall keep and maintain on-site technical drawings, blueprints or equivalent records of the physical stack parameters for Stack S01. [s. NR 439.04(1)(d), Wis. Adm. Code; 13-KB-181] *</p> <p>(7) The permittee shall retain copies of the results of any compliance emission tests [s. NR 439.04(1)(a), Wis. Adm. Code; 13-KB-181] *</p>

² The Mercury emissions limits are based on modeling and are included in the permit so that all air quality standards in ch. NR 445 and in ch. NR 446, Wis. Adm. Code are met.

³ These requirements are included because the source was reviewed with these stack parameters and it was determined that ambient air quality standards will not be violated.

A. Process P01; Control Device(s) C01, C02; Stack S01 – Model 2000 Lamp Recycler (constructed or last modified in 1993), Equipped with a Donaldson – Torit TD cartridge filter system (C01) and carbon adsorber (C02) and discharges to Stack S01.		
3. Pollutant: Visible Emissions		
a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
(1) Emissions of shade or density may not be greater than number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code]	(1) The requirements in Conditions I.A.1.b.(1) shall also serve as compliance demonstration methods for visible emissions. [s. NR 407.09(4)(a)1., Wis. Adm. Code]	(1) The requirements in Conditions I.A.1.c.(1)-(3), (5), and (6) shall also serve as monitoring and recordkeeping methods for visible emissions. [ss. NR 439.04(1)(d) and 439.055(2)(b)1., Wis. Adm. Code]

B. Process P08; Control Device(s) C04, C05; Stack S08 – Model LSSI Lamp Recycler (constructed or last modified in 2004) equipped with a HEPA filter system (C04) and carbon adsorber (C05) and discharges to Stack S08.		
1. Pollutant: Particulate Matter Emissions		
a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
<p>(1) The particulate matter emissions from Stack S08 may not exceed 0.40 pounds of particulate matter per 1,000 pounds of gas.⁴ [s. NR 415.05(1)(o), Wis. Adm. Code; 01-DJH-339]</p> <p>(2) The ch. NR 415, Wis. Adm. Code allowable emissions of particulate matter are calculated by the use of the equation $E = 3.59 P^{0.62}$ for process weight rates up to 60,000 pounds per hour and by use of the equation $E = 17.31 P^{0.16}$ for process weight rates of 60,000 pounds per hour or more, where E is the allowable emissions in pounds per hour and P is the process weight rate in tons per hour. If the calculated emission rate is less restrictive than the applicable concentration specified under I.B.1.a.(1) based on the maximum exhaust flow rate and normal exhaust gas temperature, the limitation under I.B.1.a.(1) shall apply.³ [s. NR 415.05(2), Wis. Adm. Code]</p>	<p>(1) The HEPA filter system (C04) shall be in line and shall be operated at all times when Process P08 is in operation. [s. NR 407.09(4)(a)1., Wis. Adm. Code]</p> <p>(2) The pressure drop across the HEPA filter system (C04) shall be within the range of 0.4 to 6.0 inches of water when Process P08 is in operation. [s. NR 439.11(4), Wis. Adm. Code]</p> <p>(3) The permittee shall maintain and follow a malfunction prevention and abatement plan for the HEPA filter system (C04) and carbon adsorber (C05) as required under I.ZZZ.1. [NR 439.11, Wis. Adm. Code]</p>	<p>(1) Whenever Process P08 is operating, the pressure drop across the HEPA filter system (C04) shall be measured and recorded a minimum of once for every 8 hours of source operation or once per day, whichever yields the greater number of measurements. The permittee shall keep these records for a period of five (5) years and make these records available to the Department personnel upon request any time during normal working hours. [s. NR 439.055(2)(b)1., Wis. Adm. Code]</p> <p>(2) A log shall be kept of all maintenance required on the HEPA filter system (C04) and the dates of filter replacements. [s. NR 439.04(1)(b), Wis. Adm. Code]</p>

⁴ The ch. NR 415, Wis. Adm. Code allowable emission limit for Particulate Matter Emissions which is based on the allowable limit under s. NR 415.05(1)(o), Wis. Adm. Code is equal to 0.90 lb/hr which is more restrictive than the value calculated using the process weight rate in s. NR 415.05(2), Wis. Adm. Code. The potential emission is a much lower value and is equal to 0.0088 lb/hr. The limitations from ss. NR 415.05(1)(o) and NR 415.05(2), Wis. Adm. Code have been listed based on current Departmental Policy.

B. Process P08; Control Device(s) C04, C05; Stack S08 – Model LSSI Lamp Recycler (constructed or last modified in 2004) equipped with a HEPA filter system (C04) and carbon adsorber (C05) and discharges to Stack S08.		
2. Pollutant: Hazardous Air Pollutants regulated by ch. NR 445 and ch. NR 446, Wis. Adm. Code: Mercury Emissions *		
a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
<p>(1) Mercury emissions exhausting Stack S08 may not exceed 0.00089 pounds per hour.⁵ [s. NR 445.07(1)(a), Wis. Adm. Code; 13-KB-181] *</p> <p>(2) The Mercury concentration in the exhaust gas from Stack S08 may not exceed 0.4752 milligrams per cubic meter.⁵ [s. 285.65(4), Wis. Stats.; 13-KB-181] *</p> <p>(3) The permittee shall maintain the following parameters for Stack S08 listed below:⁶</p> <p>(a) Stack S08 shall be at least 25 feet above ground level;</p> <p>(b) Stack S08 may not be equipped with a rainhat or any other device which impedes the upward flow of the exhaust gases. [s. 285.65(3), Wis. Stats.; 13-KB-181] *</p>	<p>(1) The carbon adsorber (C05) shall be in line and shall be operated at all times when Process P08 is in operation. [s. NR 407.09(4)(a)1., Wis. Adm. Code; 13-KB-181] *</p> <p>(2) The permittee shall maintain and follow a malfunction prevention and abatement plan for the HEPA filter system (C04) and carbon adsorber (C05) as required under I.ZZZ.1. [NR 439.11, Wis. Adm. Code]</p>	<p>(1) The mercury concentration in the exhaust gas shall be measured and recorded with a portable mercury vapor analyzer (Arizona Instruments, Jerome 431X, or equivalent) once per day while Process P08 is operating. [s. 285.65(10), Wis. Stats.; 13-KB-181] *</p> <p>(2) The permittee shall install and operate instrumentation to monitor the pressure drop across the carbon adsorber (C05) and prefilter in inches of water, and temperature within the carbon adsorber (C05) in degrees Fahrenheit or Celsius (centigrade) within two months after the effective date of this permit. [s. NR 439.055(1)(g), Wis. Adm. Code; 13-KB-181] *</p> <p>(3) Whenever Process P08 is operating, the permittee shall measure and record the pressure drop across the carbon adsorber (C05) once for every 8 hours of source operation or once per day, whichever yields the greater number of measurements, after a pressure drop range (lower and upper values in inches of water) that adequately represents the adsorber conditions has been established (which shall be done within six months after the effective date of this permit). The permittee shall keep these records for a period of five (5) years and make these records available to the Department personnel upon request any time during normal working hours. [s. NR 439.055(2)(b)1., Wis. Adm. Code; 13-KB-181] *</p> <p>(4) Reference Test Method for Mercury Emissions: Whenever compliance emission testing is required, the permittee shall use U.S. EPA Method 0012 or other methods and plans approved, in writing, by the Department. [s. NR 439.06(8), Wis. Adm. Code]</p> <p>(5) A log shall be kept of all maintenance required on the carbon adsorber (C05) and the dates of adsorber replacements. [s. NR 439.04(1)(b), Wis. Adm. Code; 13-KB-181] *</p> <p>(6) The permittee shall keep and maintain on-site technical drawings, blueprints or equivalent records of the physical stack parameters for Stack S08. [s. NR 439.04(1)(d), Wis. Adm. Code; 13-KB-181] *</p> <p>(7) The permittee shall retain copies of the results of any compliance emission tests. [s. NR 439.04(1)(a), Wis. Adm. Code; 13-KB-181] *</p>

⁵ The Mercury emissions limits are based on modeling and are included in the permit so that all air quality standards in ch. NR 445 and in ch. NR 446, Wis. Adm. Code are met.

⁶ These requirements are included because the source was reviewed with these stack parameters and it was determined that ambient air quality standards will not be violated.

B. Process P08; Control Device(s) C04, C05; Stack S08 – Model LSSI Lamp Recycler (constructed or last modified in 2004) equipped with a HEPA filter system (C04) and carbon adsorber (C05) and discharges to Stack S08.		
3. Pollutant: Visible Emissions		
a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
(1) Emissions of shade or density may not be greater than number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code]	(1) The requirements in Conditions I.B.1.b.(1) shall also serve as compliance demonstration methods for visible emissions. [s. NR 407.09(4)(a)1., Wis. Adm. Code]	(1) The requirements in Conditions I.B.1.c.(1)-(3), (5), and (6) shall also serve as monitoring and recordkeeping methods for visible emissions. [ss. NR 439.04(1)(d) and 439.055(2)(b)1., Wis. Adm. Code]

- C. Stack S14 (Retort room stack equipped with a carbon adsorber (C10) controlling discharges from process Stack S11, process Stack S15, and F99 fugitive emissions from retort room); Processes: [(1) Process P10, Control Device(s) C07, C09, Stack S11 – RipSys Retort Oven (constructed or last modified in 2002) equipped with electronic afterburner (C07) and carbon adsorber (C09) and discharges through process Stack S11 to retort room;**
- (2) Process P11, Control Device(s) C08, C09, Stack S11 – Magna Drum Retort Oven (constructed or last modified in 2002) equipped with electronic afterburner (C08) and carbon adsorber (C09) and discharges through process Stack S11 to retort room;**
- (3) Process P14, Control Device C11, Stack S15 – Natural Gas fired Wisconsin Oven Retort System equipped with a carbon adsorber (C11) and discharges through process stack S15 to retort room; and**
- (4) F99 – Fugitive emissions from retort room] ----- Emissions from Retort ovens and retort room ventilation.**

1. Pollutant: Particulate Matter Emissions

a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
<p>(1) The particulate matter emissions from Stack S14 may not exceed 0.40 pounds of particulate matter per 1,000 pounds of gas.⁷ [s. NR 415.05(1)(o), Wis. Adm. Code]</p> <p>(2) The ch. NR 415, Wis. Adm. Code allowable emissions of particulate matter are calculated by the use of the equation $E = 3.59 P^{0.62}$ for process weight rates up to 60,000 pounds per hour and by use of the equation $E = 17.31 P^{0.16}$ for process weight rates of 60,000 pounds per hour or more, where E is the allowable emissions in pounds per hour and P is the process weight rate in tons per hour. If the calculated emission rate is less restrictive than the applicable concentration specified under I.C.1.a.(1) based on the maximum exhaust flow rate and normal exhaust gas temperature, the limitation under I.C.1.a.(1) shall apply.⁵ [s. NR 415.05(2), Wis. Adm. Code]</p>	<p>(1) The requirements in I.C.2.b.(1), (2), and (3) shall also serve as compliance demonstration methods for Particulate Matter Emissions. [s. NR 407.09(4)(a)1., Wis. Adm. Code; 13-KB-181]</p>	<p>(1) The requirements in I.C.2.c.(1), (2), (3), (4), (5) and (6) shall also serve as monitoring and recordkeeping methods for Particulate Matter Emissions. [ss. NR 439.04(1)(d) and 439.055(2)(b)1., Wis. Adm. Code; 13-KB-181]</p>

⁷The ch. NR 415, Wis. Adm. Code allowable emission limit for Particulate Matter Emissions which is based on the allowable limit under s. NR 415.05(2), Wis. Adm. Code is equal to 1.836 lbs/hr which is more restrictive than the value calculated based on s. NR 415.05(1)(o), Wis. Adm. Code. The potential emission is a much lower value and is equal to 0.019 lb/hr. The limitations from ss. NR 415.05(1)(o) and NR 415.05(2), Wis. Adm. Code have been listed based on current Departmental Policy.

- C. Stack S14 (Retort room stack equipped with a carbon adsorber (C10) controlling discharges from process Stack S11, process Stack S15, and F99 fugitive emissions from retort room); Processes: [(1) Process P10, Control Device(s) C07, C09, Stack S11 – RipSys Retort Oven (constructed or last modified in 2002) equipped with electronic afterburner (C07) and carbon adsorber (C09) and discharges through process Stack S11 to retort room;**
- (2) Process P11, Control Device(s) C08, C09, Stack S11 – Magna Drum Retort Oven (constructed or last modified in 2002) equipped with electronic afterburner (C08) and carbon adsorber (C09) and discharges through process Stack S11 to retort room;**
- (3) Process P14, Control Device C11, Stack S15 – Natural Gas fired Wisconsin Oven Retort System equipped with a carbon adsorber (C11) and discharges through process stack S15 to retort room; and**
- (4) F99 – Fugitive emissions from retort room] ----- Emissions from Retort ovens and retort room ventilation.**

2. Pollutant: Hazardous Air Pollutants regulated by ch. NR 445 and ch. NR 446, Wis. Adm. Code: Mercury Emissions *

a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
<p>(1) Mercury emissions exhausting Stack S14 may not exceed 0.013 pounds per hour.⁸ [ss. 285.63(1)(a) and 285.65(3), Wis. Stats.; 13-KB-181] *</p> <p>(2) The Mercury concentration in the exhaust gas from Stack S14 may not exceed 0.9469 milligrams per cubic meter.⁸ [ss. 285.63(1)(a) and 285.65(3), Wis. Stats.; 13-KB-181] *</p> <p>(3) The permittee shall maintain the following parameters for the Stack S14 listed below:⁹</p> <p>(a) Stack S14 shall be at least 25 feet above ground level;</p> <p>(b) Stack S14 may not be equipped with a rainhat or any other device which impedes the upward flow of the exhaust gases. [s. 285.65(3), Wis. Stats.; 13-KB-181] *</p>	<p>(1) The carbon adsorber (C09) shall be in line and shall be operated at all times when either one or both of Processes P10 and P11 are in operation. [s. NR 407.09(4)(a)1., Wis. Adm. Code; 13-KB-181] *</p> <p>(2) The carbon adsorber (C11) shall be in line and shall be operated at all times when Process P14 is in operation. [s. NR 407.09(4)(a)1., Wis. Adm. Code; 13-KB-181] *</p> <p>(3) The carbon adsorber (C10) shall be in line and shall be operated at all times when one or more of the Processes P10, P11, and P14 are in operation, and also when there are fugitive emissions in the retort room (F99). [s. NR 407.09(4)(a)1., Wis. Adm. Code; 13-KB-181] *</p> <p>(4) The permittee shall maintain and follow a malfunction prevention and abatement plan for the carbon adsorbers (C09, C10, and C11) as required under I.ZZZ.1. [NR 439.11, Wis. Adm. Code]</p>	<p>(1) The mercury concentration in the exhaust gas from Stack S14 shall be measured and recorded with a portable mercury vapor analyzer (Arizona Instruments, Jerome 431X, or equivalent) once per day while when one or more of the Processes P10, P11, and P14 are in operation, and when there are fugitive emissions in the retort room (F99). [s. 285.65(10), Wis. Stats.; 13-KB-181] *</p> <p>(2) The permittee shall install and operate instrumentation to monitor the pressure drop across the carbon adsorber C09, and prefilter in inches of water, and temperature within the carbon adsorber C09 in degrees Fahrenheit or Celsius (centigrade) within two months of Process P14 becoming operational. [s. NR 439.055(1)(g), Wis. Adm. Code; 13-KB-181] *</p> <p>(3) The permittee shall install and operate instrumentation to monitor the pressure drop across the carbon adsorbers (C11 and C10) and prefilters in inches of water, and temperature within the carbon adsorbers (C11 and C10) in degrees Fahrenheit or Celsius (centigrade) within two months of Process P14 becoming operational. [s. NR 439.055(1)(g), Wis. Adm. Code; 13-KB-181] *</p> <p>(4) Whenever either one or both of the Processes P10 and P11 are in operation, the permittee shall measure and record the pressure drop across the carbon adsorber (C09) once for every 8 hours of source operation or once per day, whichever yields the greater number of measurements, after a pressure drop range (lower and upper values in inches of water) that adequately represents the adsorber conditions has been established (which shall be done within six months of Process P14 becoming operational). The permittee shall keep these records for a period of five (5) years and make these records available to the Department personnel upon request any time during normal working hours. [s. NR 439.055(2)(b)1., Wis. Adm. Code; 13-KB-181] *</p> <p>(5) Whenever Process P14 is operating, the permittee shall measure and record the pressure drop across the carbon adsorber (C11) once for every 8 hours of source</p>

⁸ The Mercury emissions limits are based on modeling and are included in the permit so that all air quality standards in ch. NR 445 and in ch. NR 446, Wis. Adm. Code are met. The original mercury emissions limits from permit 13-KB-181 were 0.019 pounds per hour and 1.3527 milligrams per cubic meter. Based on updated modeling, these limits were reduced as part of permit 246076050-S02.

⁹ These requirements are included because the source was reviewed with these stack parameters and it was determined that ambient air quality standards will not be violated.

<p>C. Stack S14 (Retort room stack equipped with a carbon adsorber (C10) controlling discharges from process Stack S11, process Stack S15, and F99 fugitive emissions from retort room); Processes: [(1) Process P10, Control Device(s) C07, C09, Stack S11 – RipSys Retort Oven (constructed or last modified in 2002) equipped with electronic afterburner (C07) and carbon adsorber (C09) and discharges through process Stack S11 to retort room;</p> <p>(2) Process P11, Control Device(s) C08, C09, Stack S11 – Magna Drum Retort Oven (constructed or last modified in 2002) equipped with electronic afterburner (C08) and carbon adsorber (C09) and discharges through process Stack S11 to retort room;</p> <p>(3) Process P14, Control Device C11, Stack S15 – Natural Gas fired Wisconsin Oven Retort System equipped with a carbon adsorber (C11) and discharges through process stack S15 to retort room; and</p> <p>(4) F99 – Fugitive emissions from retort room] ----- Emissions from Retort ovens and retort room ventilation.</p>		
2. Pollutant: Hazardous Air Pollutants regulated by ch. NR 445 and ch. NR 446, Wis. Adm. Code: Mercury Emissions *		
a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
		<p>operation or once per day, whichever yields the greater number of measurements, after a pressure drop range (lower and upper values in inches of water) that adequately represents the adsorber conditions has been established (which shall be done within six months after Process P14 becomes operational). The permittee shall keep these records for a period of five (5) years and make these records available to the Department personnel upon request any time during normal working hours. [s. NR 439.055(2)(b)1., Wis. Adm. Code; 13-KB-181] *</p> <p>(6) Whenever one or more of the Processes P10, P11, and P14 are in operation, and also when there are fugitive emissions in the retort room (F99), the permittee shall measure and record the pressure drop across the carbon adsorber (C10) once for every 8 hours of source operation or once per day, whichever yields the greater number of measurements, after a pressure drop range (lower and upper values in inches of water) that adequately represents the adsorber conditions has been established (which shall be done within six months after Process P14 becomes operational). The permittee shall keep these records for a period of five (5) years and make these records available to the Department personnel upon request any time during normal working hours. [s. NR 439.055(2)(b)1., Wis. Adm. Code; 13-KB-181] *</p> <p>(7) Reference Test Method for Mercury Emissions: Whenever compliance emission testing is required, the permittee shall use U.S. EPA Method 0012 or other methods and plans approved, in writing, by the Department. [s. NR 439.06(8), Wis. Adm. Code]</p> <p>(8) A log shall be kept of all maintenance required on the carbon adsorbers (C09, C11, and C10) and the dates of adsorber replacements. [s. NR 439.04(1)(b), Wis. Adm. Code; 13-KB-181] *</p> <p>(9) The permittee shall keep and maintain on-site technical drawings, blueprints or equivalent records of the physical stack parameters for Stack S14. [s. NR 439.04(1)(d), Wis. Adm. Code; 13-KB-181] *</p> <p>(10) The permittee shall retain copies of the results of any compliance emission tests. [s. NR 439.04(1)(a), Wis. Adm. Code; 13-KB-181] *</p>

- C. Stack S14 (Retort room stack equipped with a carbon adsorber (C10) controlling discharges from process Stack S11, process Stack S15, and F99 fugitive emissions from retort room); Processes: [(1) Process P10, Control Device(s) C07, C09, Stack S11 – RipSys Retort Oven (constructed or last modified in 2002) equipped with electronic afterburner (C07) and carbon adsorber (C09) and discharges through process Stack S11 to retort room;
- (2) Process P11, Control Device(s) C08, C09, Stack S11 – Magna Drum Retort Oven (constructed or last modified in 2002) equipped with electronic afterburner (C08) and carbon adsorber (C09) and discharges through process Stack S11 to retort room;
- (3) Process P14, Control Device C11, Stack S15 – Natural Gas fired Wisconsin Oven Retort System equipped with a carbon adsorber (C11) and discharges through process stack S15 to retort room; and
- (4) F99 – Fugitive emissions from retort room] ----- Emissions from Retort ovens and retort room ventilation.

3. Pollutant: Visible Emissions

a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
(1) Emissions of shade or density may not be greater than number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code; 13-KB-181]	(1) The requirements in Condition I.C.1.b.(1), shall also serve as compliance demonstration methods for visible emissions. [s. NR 407.09(4)(a)1., Wis. Adm. Code; 13-KB-181]	(1) The requirements in Condition I.C.1.c.(1) shall also serve as monitoring and recordkeeping methods for visible emissions. [ss. NR 439.04(1)(d) and 439.055(2)(b)1., Wis. Adm. Code; 13-KB-181]

D. Process P13, Uncontrolled, Stack S16 – Generac SD500 500 KW Emergency Diesel Generator (constructed or last modified in 2010), discharges through Stack S16. Subject to NSPS Subpart A and IIII and MACT Subpart ZZZZ.		
1. Pollutant: All Pollutants/General Limitations		
a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
<p>(1) The emergency generator may only be used to provide power if normal electrical service is interrupted and for periodic testing purposes. [s. NR 400.02(56), Wis. Adm. Code]</p> <p>(2) The generator is limited to no more than 200 hours per year of operation and not more than 16.67 hours per month averaged over the prior 12 consecutive months. [s. NR 400.02(56), Wis. Adm. Code; s. 285.65(3), Wis. Stats.]</p>	<p>(1) The engine shall be equipped with a non-resettable hour meter. [s. 285.65(3), Wis. Stats.; s. NR 439.055(5), Wis. Adm. Code]</p>	<p>(1) The permittee shall keep the records specified in I.D.5.c.(1) and (2)(e)-(i). [s. NR 439.04(1)(d), Wis. Adm. Code]</p>

D. Process P13, Uncontrolled, Stack S16 – Generac SD500 500 KW Emergency Diesel Generator (constructed or last modified in 2010), discharges through Stack S16. Subject to NSPS Subpart A and IIII and MACT Subpart ZZZZ.		
2. Pollutant: Particulate Matter Emissions		
a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
<p>(1) Particulate matter emissions may not exceed 0.50 pounds of particulate per million Btu heat input from the emergency generator. [s. NR 485.055, Wis. Adm. Code]</p> <p>(2) Stack Parameters: (a) The stack height for each of the two Stacks that make up Stack S16 shall be at least 12 feet above ground level; (b) Each of the two Stacks that make up Stack S16 may not be equipped with a rainhat or other device which impedes the upward flow of the exhaust gases. [s. 285.65(3), Wis. Stats.]</p>	<p>(1) The permittee shall only use No. 2 Diesel Fuel to fire the emergency generator. [s. 285.65(3), Wis. Stats.]</p> <p>(2) The sulfur content of the distillate fuel oil fired by the emergency generator may not exceed 0.0015% sulfur (15 ppm S). [s. 285.65(3), Wis. Stats.]</p>	<p>(1) The facility shall maintain documentation from the fuel supplier which demonstrates that the fuel sulfur content meets the 15 ppm sulfur (max.) requirement. [s. NR 439.04(1)(d), Wis. Adm. Code]</p> <p>(2) The permittee shall keep and maintain on site records that document what fuels that the emergency generator has the ability to combust. [s. NR 439.04(1)(d), Wis. Adm. Code]</p> <p>(3) The permittee shall keep and maintain on-site technical drawings, blueprints or equivalent records of the physical stack parameters for Stack S16. [s. NR 439.04(1)(d), Wis. Adm. Code]</p> <p>(4) The permittee shall maintain monthly records of the amount of No. 2 Diesel Fuel combusted in the emergency generator, in gallons. [s. NR 439.04(1)(d), Wis. Adm. Code]</p>

D. Process P13, Uncontrolled, Stack S16 – Generac SD500 500 KW Emergency Diesel Generator (constructed or last modified in 2010), discharges through Stack S16. Subject to NSPS Subpart A and IIII and MACT Subpart ZZZZ.		
3. Pollutant: Sulfur Dioxide		
a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
(1) No. 2 Diesel Fuel with no more than 15 parts per million by weight of sulfur is the only fuel that may be fired in the emergency generator. [s. 285.65(7), Wis. Stats.]	(1) The recordkeeping requirements under I.D.3.c.(2) shall serve as the compliance demonstration methods for the sulfur dioxide emission limitation. [s. 285.65(3), Wis. Stats. and s. NR 407.09(4)(a)3.b., Wis. Adm. Code]	(1) The permittee shall keep and maintain all certificates of analysis, test results, or other supplier documentation that indicate the sulfur content for each delivery of No. 2 Diesel Fuel. [s. NR 439.04(1)(d), Wis. Adm. Code]

D. Process P13, Uncontrolled, Stack S16 – Generac SD500 500 KW Emergency Diesel Generator (constructed or last modified in 2010), discharges through Stack S16. Subject to NSPS Subpart A and IIII and MACT Subpart ZZZZ.		
4. Pollutant: Visible Emissions		
a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
<p>(1) Emissions of shade or density may not exceed number 1 of the Ringlemann chart or 20% opacity. [s. NR 431.05, Wis. Adm. Code]</p> <p>(2) When combustion equipment is being cleaned or a new fire started, emissions may exceed number 1 of the Ringlemann chart or 20% opacity but may not exceed number 4 of the Ringlemann chart or 80% opacity for 6 minutes in any one hour. Combustion equipment may not be cleaned, nor a fire started more than 3 times per day. [s. NR 431.05(1), Wis. Adm. Code]</p> <p>(3) Emissions may exceed number 1 of the Ringlemann chart or 20% opacity for stated periods of time, as permitted by the Department, for such purpose as an operating test, use of emergency equipment, or other good cause, provided no hazard or unsafe conditions arises. [s. NR 431.05(2), Wis. Adm. Code]</p>	(1) The requirements in I.D.1.b. and I.D.2.b. shall serve as the compliance demonstration methods for visible emission limits. [s. 285.65(3), Wis. Stats. and s. NR 407.09(4)(a)3.b., Wis. Adm. Code]	(1) The compliance monitoring and recordkeeping in I.D.1.c. and I.D.2.c. shall be considered compliance monitoring and recordkeeping for the visible emission limits. [S. 285.65(3), Wis. Stats. and s. NR 407.09(1)(c)1.b., Wis. Adm. Code]

D. Process P13, Uncontrolled, Stack S16 – Generac SD500 500 KW Emergency Diesel Generator (constructed or last modified in 2010), discharges through Stack S16. Subject to NSPS Subpart A and IIII and MACT Subpart ZZZZ.

5. Pollutant: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE) in 40 CFR Part 60 subpart IIII

a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
<p>(1) Owner or operators of 2007 model year or later emergency stationary compression ignition (CI) internal combustion engines (ICE) with a maximum engine power greater than or equal to 37KW (50 HP) and less than or equal to 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR §89.112 and 40 CFR §89.113 for all pollutants beginning model year 2007.</p> <p>(a) Pursuant to 40 CFR §89.112(a), exhaust emissions from nonroad engines shall not exceed the following emission standards:</p> <p><u>For model year 2007 and later nonroad engines a with power rating of greater than or equal to 130 KW (175 HP) and less than or equal to 560 KW (750 HP) the applicable exhaust emissions standards are (Tier 3).</u></p> <p>(i) Non-methane Hydrocarbons and Nitrogen Oxides and (combined): 4.0 g/KW-hr (3.0 g/HP-hr).</p> <p>(ii) Carbon Monoxide: 3.5 g/KW-hr (2.6 g/HP-hr).</p> <p>(iii) Particulate Matter: 0.20 g/KW-hr (0.15 g/HP-hr).</p>	<p>(1) The owners and operators must use diesel fuel that meets the requirements of 40 CFR §80.510(b) for nonroad diesel fuel, except that any existing diesel fuel purchased (or otherwise obtained) prior to October 1, 2010, may be used until depleted. Pursuant to 40 CFR §80.510(b)(1)(i), the sulfur content for nonroad diesel fuel may not exceed 15 ppm (0.0015 percent by weight). [40 CFR §§ 60.4207(b) and 80.510(b)(1)(i), s. 285.65 (3) and (13), Wis. Stats., and s. NR 407.09(4)(a)3.b., Wis. Adm. Code (NSPS)]</p> <p>(2) The following deadlines exist for importing or installing engines produced in previous model years:</p> <p>(a) After December 31, 2008, owners and operators may not install stationary CI ICE (excluding fire pump engines) that do not meet the applicable requirements for 2007 model year engines.</p> <p>(b) After December 31, 2009, owners and operators may not install stationary CI ICE with a maximum engine power of less than 19 KW (25 HP) (excluding fire pump engines) that do not meet the applicable requirements for 2008 model year engines.</p> <p>It is prohibited to import stationary CI ICE with a displacement of less than 30 liters per cylinder that do not meet the applicable requirements specified above after the dates specified. These requirements do not apply to owners or operators of stationary CI ICE that have been modified, reconstructed, and do not apply to engines that were removed from one existing location and reinstalled at a new location. [40 CFR §§ 60.4208 (a), (b), (h) and (i), s. 285.65 (3) and (13), Wis. Stats., and s. NR 407.09(4)(a)3.b., Wis. Adm. Code (NSPS)]</p> <p>(3) You must comply by purchasing an engine certified to the emission standards in 40 CFR §60.4205(b), for the same model year and maximum engine power. Over the entire life of the engine, the engine must be installed and configured according to the manufacturer's emission-related specifications, except as permitted in paragraph (g) of 40 CFR §60.4211 (Condition (5), below). [40 CFR §§ 60.4206 and 60.4211(c), s. 285.65 (3) and (13), Wis. Stats., and s. NR 407.09(4)(a)3.b., Wis. Adm. Code (NSPS)]</p> <p>(4) You must over the entire life of the engine do all of the following, except as permitted under paragraph (g) of 40 CFR §60.4211 (Condition (5), below):</p>	<p>(1) The permittee shall keep a record of the types of fuels purchased for each engine (generator). The records shall identify the fuel as either ultra-low sulfur diesel fuel oil or identify the sulfur content of the oil, as delivered to the storage tank for the engine. [ss. NR 407.09 (2)(d) and (4)(a)1. and NR 439.04(1)(d), Wis. Adm. Code]</p> <p>(2) The owner or operator shall maintain and have available records of the following items for each engine (generator):</p> <p>(a) The maintenance activities performed, including any inspections and part replacements;</p> <p>(b) A copy of the manufacturer's emissions-related written instructions;</p> <p>(c) A copy of the engine's certification;</p> <p>(d) If equipped with a diesel particulate filter, backpressure measurements and any corrective action taken if the high backpressure limit is approached or exceeded;</p> <p>(e) The hours of operation, including the classifications of these hours (purpose of use);</p> <p>(f) The total non-emergency hours of operation (<u>excluding</u> maintenance and readiness testing) for each calendar month;</p> <p>(g) The total non-emergency hours of operation (<u>excluding</u> maintenance and readiness testing) year-to-date for each calendar month;</p> <p>(h) The total non-emergency hours of operation (<u>including</u> maintenance and</p>

D. Process P13, Uncontrolled, Stack S16 – Generac SD500 500 KW Emergency Diesel Generator (constructed or last modified in 2010), discharges through Stack S16. Subject to NSPS Subpart A and IIII and MACT Subpart ZZZZ.		
5. Pollutant: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE) in 40 CFR Part 60 subpart IIII		
a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
<p>(b) Pursuant to 40 CFR §89.113 (a) and (c), exhaust opacity from compression –ignition nonroad engines must not exceed the following:</p> <ul style="list-style-type: none"> (i) 20 percent during acceleration mode, (ii) 15 percent during the lugging mode, and (iii) 50 percent during peaks in either acceleration or lugging modes. <p>Constant-speed engines are exempt from these opacity standards.</p> <p>[40 CFR §§ 60.4205(b), 60.4202(a)(2), 89.112 and 89.113, s. 285.65(13), Wis. Stats. (NSPS)]</p>	<ul style="list-style-type: none"> (a) Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions; (b) Change only those emission-related settings that are permitted by the manufacturer; and (c) Meet the requirements of 40 CFR parts 89 (Control of Emissions from New and In-use Nonroad CI Engines) and/or 1068 (General Compliance Provisions for Highway, Stationary, and Nonroad Programs), as they apply to you. <p>[40 CFR §§ 60.4206 and 60.4211(a), s. 285.65 (3) and (13), Wis. Stats., and s. NR 407.09(4)(a)3.b., Wis. Adm. Code (NSPS)]</p> <p>(5) If you do not operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's emission-related written instructions, or you change emission related settings in a way that is not permitted by the manufacturer, you must demonstrate compliance according to 40 CFR §60.4211(g) (1) through (3), as appropriate. [40 CFR §§ 60.4206 and 60.4211(g), s. 285.65(13), Wis. Stats., and s. NR 407.09(4)(a)3.b., Wis. Adm. Code (NSPS)]</p> <p>(6) If you own or operate an emergency stationary ICE, you must operate the emergency stationary ICE according to the requirements in paragraphs (f) (1) through (3) of 40 CFR §60.4211 (paragraphs (a) through (c), below). In order for the engine to be considered an emergency stationary ICE under 40 CFR part 60, subpart IIII, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as described in paragraphs (f) (1) through (3) of 40 CFR §60.4211 (paragraphs (a) through (c), below), is prohibited. If you do not operate the engine according to the requirements in paragraphs (f) (1) through (3) of 40 CFR §60.4211 (paragraphs (a) through (c), below), the engine will not be considered an emergency engine under this subpart and must meet all requirements for non-emergency engines.</p> <p>(a) There is no time limit on the use of emergency stationary ICE in emergency situations.¹⁰</p>	<p>readiness testing) for each calendar month; and</p> <ul style="list-style-type: none"> (i) The total non-emergency hours of operation (<u>including</u> maintenance and readiness testing) year-to-date for each calendar month. <p>If the permittee fails to configure, maintain, and operate an engine (generator) according to the manufacturer's emission-related specifications or instructions, the monthly year-to-date total non-emergency hours of operation (<u>excluding</u> maintenance and readiness testing) for any engine (generator) exceeds 50 hours, and/or the monthly year-to-date total non-emergency hours of operation (<u>including</u> maintenance and readiness testing) for any engine (generator) exceeds 100 hours, the permittee shall notify the Department in writing within 30 days from the date of determining the event occurred. [40 CFR §§ 60.4214 (b) and (c) and 60.4211(g) (1) and (2), s. 285.65(13), Wis. Stats., and ss. NR 407.09(4)(a)1. and NR 439.04(1)(d), Wis. Adm. Code (NSPS)]</p> <ul style="list-style-type: none"> (3) If you own or operate an emergency stationary CI ICE with a maximum engine power more than 100 HP that operates for the purposes specified in 40 CFR §60.4211(f)(3)(i), you must submit an annual report according to the requirements in paragraphs (d) (1) through (3) of 40 CFR § 60.4214 (paragraphs (a) through (c), below).

¹⁰ Although unlimited engine (generator) use is authorized under the NSPS (RICE) during emergency situations, the engine's (generator's) hours of operation may be restricted by

D. Process P13, Uncontrolled, Stack S16 – Generac SD500 500 KW Emergency Diesel Generator (constructed or last modified in 2010), discharges through Stack S16. Subject to NSPS Subpart A and IIII and MACT Subpart ZZZZ.		
5. Pollutant: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE) in 40 CFR Part 60 subpart IIII		
a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
	<p>(b) You may operate your emergency stationary ICE for any combination of the purposes specified in paragraph (f)(2)(i) of 40 CFR §60.4211 (paragraph (i), below) for a maximum of 100 hours per calendar year.¹¹ Any operation for non-emergency situations as allowed by paragraph (d)(3) of 40 CFR §60.4243 (paragraph (c), below) counts as part of the 100 hours per calendar year allowed by this paragraph (paragraph (f)(2) of §60.4211).</p> <p>(i) Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year.</p> <p>(c) Emergency stationary ICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing provided in paragraph (f)(2) of §60.4211 (paragraph (b), above). Except as provided in paragraph (f)(3)(i) of §60.4211 (paragraph (i), below), the 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.</p> <p>(i) The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met:</p>	<p>(a) The report must contain the following information:</p> <ul style="list-style-type: none"> (i) Company name and address where the engine is located; (ii) Date of the report and beginning and ending dates of the reporting period; (iii) Engine site rating and model year; (iv) Latitude and longitude of the engine in decimal degrees reported to the fifth decimal place; (v) Hours spent for operation for the purposes specified in 40 CFR §60.4211(f)(3)(i), including the date, start time, and end time for engine operation for the purposes specified in 40 CFR §60.4211(f)(3)(i). The report must also identify the entity that dispatched the engine and the situation that necessitated the dispatch of the engine. <p>(b) Each annual report must cover the just completed calendar year and must be submitted no later than March 31 of the current year.</p> <p>(c) The annual report must be submitted electronically using the subpart specific reporting form in the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA's Central Data Exchange (CDX)</p>

state regulations.

¹¹ On May 1, 2015, the D.C. Courts of Appeals vacated the exemption provisions for emergency demand response in the RICE NESHAP and NSPS (*Delaware Dept. of Nat. Resources and Envtl. Control v. EPA*).

D. Process P13, Uncontrolled, Stack S16 – Generac SD500 500 KW Emergency Diesel Generator (constructed or last modified in 2010), discharges through Stack S16. Subject to NSPS Subpart A and IIII and MACT Subpart ZZZZ.

5. Pollutant: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE) in 40 CFR Part 60 subpart IIII

a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
	<p>(A) The engine is dispatched by the local balancing authority or local transmission and distribution system operator;</p> <p>(B) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.</p> <p>(C) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.</p> <p>(D) The power is provided only to the facility itself or to support the local transmission and distribution system.</p> <p>(E) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.</p> <p>[40 CFR §§ 60.4211(f) and 60.4219, s. 285.65 (3) and (13), Wis. Stats., and s. NR 407.09(4)(a)3.b., Wis. Adm. Code (NSPS)]</p> <p>(7) If the emergency stationary CI internal combustion engine (generator) does not meet the standards applicable to non-emergency engines, you must install a non-resettable hour meter upon startup of your emergency engine. [40 CFR § 60.4209(a), s. 285.65 (3) and (13), Wis. Stats., and s. NR 407.09(4)(a)3.b., Wis. Adm. Code (NSPS)]</p> <p>(8) If the emergency stationary CI internal combustion engine (generator) equipped with a diesel particulate filter to comply with the emission standards in 40 CFR §60.4204, the diesel particulate filter must be installed with a backpressure monitor that notifies the owner or operator when the high backpressure limit of the engine is approached. [40 CFR § 60.4209(b) , s. 285.65 (3) and (13), Wis. Stats., and sd. NR 407.09(4)(a)3.b., Wis. Adm. Code (NSPS)]</p> <p>(9) The permittee shall track all hours of operation for each engine (generator). The permittee must identify how many hours are spent for emergency operation, including what classified the hours as emergency operation (purpose of use), and how many hours are spent for non-emergency operation, including what</p>	<p>(www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written report must be submitted to the Administrator at the appropriate address listed in 40 CFR §60.4.</p> <p>[40 CFR § 60.4214(d), s. 285.65(13), Wis. Stats., and ss. NR 407.09(4)(a)1. and NR 439.04(1)(d), Wis. Adm. Code (NSPS)]</p>

D. Process P13, Uncontrolled, Stack S16 – Generac SD500 500 KW Emergency Diesel Generator (constructed or last modified in 2010), discharges through Stack S16. Subject to NSPS Subpart A and IIII and MACT Subpart ZZZZ.		
5. Pollutant: Standards of Performance for Stationary Compression Ignition Internal Combustion Engines (CI ICE) in 40 CFR Part 60 subpart IIII		
a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
	<p>classified the hours as non-emergency operation (purpose of use). [s. 285.65(3), Wis. Stats. and s. NR 407.09(4)(a)3.b., Wis. Adm. Code]</p> <p>(10) At the end of each month, the permittee shall determine the following for each engine (generator):</p> <p>(a) The total hours of non-emergency operation (<u>excluding</u> maintenance and readiness testing) for the just completed month;</p> <p>(b) The total hours of non-emergency operation (<u>excluding</u> maintenance and readiness testing) year-to-date for the just completed calendar month;</p> <p>(c) The total hours of non-emergency operation (<u>including</u> maintenance and readiness testing) for the just completed calendar month; and</p> <p>(d) The total hours of non-emergency operation (<u>including</u> maintenance and readiness testing) year-to-date for the just completed calendar month.</p> <p>[s. 285.65(3), Wis. Stats. and s. NR 407.09(4)(a)3.b., Wis. Adm. Code]</p>	

D. Process P13, Uncontrolled, Stack S16 – Generac SD500 500 KW Emergency Diesel Generator (constructed or last modified in 2010), discharges through Stack S16. Subject to NSPS Subpart A and IIII and MACT Subpart ZZZZ.		
6. Pollutants: National Emission Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines [40 CFR part 63, subpart ZZZZ] - Federal Hazardous Air Pollutants (HAP)		
a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
(1) An affected source that is a new or reconstructed stationary RICE located at an area source or a new or reconstructed emergency stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions must meet the requirements in 40 CFR part 63, subpart ZZZZ by meeting the requirements of 40 CFR part 60, subpart IIII for compression ignition engines. No further requirements apply for such engines under 40 CFR part 63, subpart ZZZZ. [40 CFR §63.6590(c) (1) and (6) and s. 285.65(13), Wis. Stats. (MACT/GACT)]	(1) The compliance demonstration requirements for the NSPS in subsection 3.b., above, shall be used to demonstrate compliance with 40 CFR part 63, subpart ZZZZ (RICE). [40 CFR §63.6590(c) (1) and (6), s. 285.65 (3) and (13), Wis. Stats., and s. NR 407.09(4)(a)3.b., Wis. Adm. Code (MACT/GACT)]	(1) The monitoring and recordkeeping requirements for the NSPS in subsection 3.c., above, shall be used to demonstrate compliance with 40 CFR part 63, subpart ZZZZ (RICE). [40 CFR §63.6590(c) (1) and (6), s. 285.65(13), Wis. Stats., and ss. NR 407.09(4)(a)1. and NR 439.04(1)(d), Wis. Adm. Code (MACT/GACT)]

E. Emissions from Flue Stacks from Retort Ovens:

Stack S12, Process P10, Control Devices C12 and C15 – RipSys Retort Oven (Constructed or Last Modified in 2002, Natural Gas Fired, Maximum Heat Input: 0.4 MMBtu/hr) equipped with air-to-air heat exchanger (C12) and activated carbon adsorber with particulate pre-filter (C15)

Stack S13, Process P11, Controls Devices C13 and C16 – Magna Drum Retort Oven (Constructed or Last Modified in 2002, Natural Gas Fired, Maximum Heat Input: 0.5 MMBtu/hr) equipped with air-to-air heat exchanger (C13) and activated carbon adsorber with particulate pre-filter (C16)

Stack S17, Process P14, Controls C14 and C17 – Wisconsin Oven Retort System (Natural Gas Fired, Maximum Heat Input: 1.5 MMBtu/hr) equipped with air-to-air heat exchanger (C14) and two activated carbon adsorbers with one particulate pre-filter (C17)

1. Pollutant: Particulate Matter Emissions

a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
(1) Emissions of particulate matter from each of the Stacks S12, S13, and S17 may not exceed 0.15 pounds of particulate matter per million Btu heat input. ¹² [s. NR 415.06(2)(a), Wis. Adm. Code; 13-KB-181]	(1) The permittee shall only fire Natural Gas in Processes P10, P11, and P14. [ss. NR 407.09(1)(c)1.b., Wis. Adm. Code and 285.65(3) and 285.63(1)(a), Wis. Stats.; 13-KB-181] (2) The permittee shall maintain and follow a malfunction prevention and abatement plan for the carbon adsorbers with particulate pre-filters (C12 through C17) as required under I.ZZZ.1. [NR 439.11, Wis. Adm. Code]	(1) The permittee shall retain on site plans and specifications or equivalent documentation that indicate fuel usage design capabilities of each of the Processes P10, P11, and P14. ¹³ [s. NR 439.04(1)(d), Wis. Adm. Code; 13-KB-181] (2) The permittee shall keep and maintain on-site technical drawings, blueprints or equivalent records of the physical stack parameters for Stacks S12, S13, and S17. [s. NR 439.04(1)(d), Wis. Adm. Code; 13-KB-181]

¹²Particulate matter emissions are associated with combustion by products while firing natural gas. Because the maximum theoretical emissions while firing natural gas are less than the allowable limit of 0.15 pounds per million Btu heat input from s. NR 415.06(2)(a), Wis. Adm. Code, limiting the type of fuel used is adequate to demonstrate compliance with the particulate matter emission limit.

¹³These plans and specifications are sufficient because these retort ovens are designed to only fire natural gas.

E. Emissions from Flue Stacks from Retort Ovens:

Stack S12, Process P10, Control Devices C12 and C15 – RipSys Retort Oven (Constructed or Last Modified in 2002, Natural Gas Fired, Maximum Heat Input: 0.4 MMBtu/hr) equipped with air-to-air heat exchanger (C12) and activated carbon adsorber with particulate pre-filter (C15)

Stack S13, Process P11, Controls Devices C13 and C16 - Magna Drum Retort Oven (Constructed or Last Modified in 2002, Natural Gas Fired, Maximum Heat Input: 0.5 MMBtu/hr) equipped with air-to-air heat exchanger (C13) and activated carbon adsorber with particulate pre-filter (C16)

Stack S17, Process P14, Controls C14 and C17 - Wisconsin Oven Retort System (Natural Gas Fired, Maximum Heat Input: 1.5 MMBtu/hr) equipped with air-to-air heat exchanger (C14) and two activated carbon adsorbers with one particulate pre-filter (C17)

2. Pollutant: Visible Emissions

a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
(1) Emissions may not be greater than 20% opacity or number 1 of the Ringlemann chart. [s. NR 431.05, Wis. Adm. Code; 13-KB-181]	(1) The requirement for Particulate Matter emissions in I.E.1.b.(1) shall be used as compliance demonstration for the opacity limit. [s. NR 407.09(4)(a)3.b., Wis. Adm. Code; 13-KB-181]	(1) Same as for particulate matter emissions listed in I.E.1.c.(2). [s. NR 439.04(1)(d), Wis. Adm. Code; 13-KB-181]

E. Emissions from Flue Stacks from Retort Ovens:

Stack S12, Process P10, Control Devices C12 and C15 – RipSys Retort Oven (Constructed or Last Modified in 2002, Natural Gas Fired, Maximum Heat Input: 0.4 MMBtu/hr) equipped with air-to-air heat exchanger (C12) and activated carbon adsorber with particulate pre-filter (C15)

Stack S13, Process P11, Controls Devices C13 and C16 - Magna Drum Retort Oven (Constructed or Last Modified in 2002, Natural Gas Fired, Maximum Heat Input: 0.5 MMBtu/hr) equipped with air-to-air heat exchanger (C13) and activated carbon adsorber with particulate pre-filter (C16)

Stack S17, Process P14, Controls C14 and C17 - Wisconsin Oven Retort System (Natural Gas Fired, Maximum Heat Input: 1.5 MMBtu/hr) equipped with air-to-air heat exchanger (C14) and two activated carbon adsorbers with one particulate pre-filter (C17)

3. Pollutant: Mercury *

a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
<p>(1) Prior to the mercury concentration in the exhaust gas from any of Stacks S12, S13, and S17 exceeding 0.020 milligrams per cubic meter the permittee shall take precautions to reduce the emissions of mercury from the stack.¹⁴</p> <p>[s. NR 445.07(1)(a), Wis. Adm. Code, s. 285.65(7), Wis. Stats.] *</p> <p>(2) Emissions of mercury may not exceed the following:</p>	<p>(1) Precautions for demonstrating compliance with I.E.3.a.(1) include, but are not limited to, shutting down the associated retort oven or replacing or performing maintenance on the associated control devices. [s. NR 445.08(2)(b), Wis. Adm. Code, s. 285.65(7), Wis. Stats.] *</p> <p>(2) Each heat exchanger (C12, C13, or C14) and each carbon adsorber with particulate pre-filter (C15, C16, or C17) shall be in line and shall be operated at all times when the associated process (P10, P11, or P14, respectively) is in operation.</p>	<p>(1) <u>Reference Test Method for Mercury Emissions:</u> Whenever compliance emission testing is required, the permittee shall use U.S. EPA Method 0012 or other methods and plans approved, in writing, by the Department. [s. NR 439.06(8), Wis. Adm. Code] *</p> <p>(2) The permittee shall measure and record the mercury concentration in the exhaust gas from each of Stacks S12, S13, and S17 once for every 8 hours of source operation or once per day, whichever yields the greater number of measurements, using a mercury vapor analyzer. [s. NR 439.055(6), Wis. Adm. Code] *</p>

¹⁴ The Mercury emissions limits are elected by the permittee and included in the permit so that the permittee can demonstrate compliance with all air quality standards in ch. NR 445 and ch. NR 446, Wis. Adm. Code.

E. Emissions from Flue Stacks from Retort Ovens:

Stack S12, Process P10, Control Devices C12 and C15 – RipSys Retort Oven (Constructed or Last Modified in 2002, Natural Gas Fired, Maximum Heat Input: 0.4 MMBtu/hr) equipped with air-to-air heat exchanger (C12) and activated carbon adsorber with particulate pre-filter (C15)

Stack S13, Process P11, Controls Devices C13 and C16 – Magna Drum Retort Oven (Constructed or Last Modified in 2002, Natural Gas Fired, Maximum Heat Input: 0.5 MMBtu/hr) equipped with air-to-air heat exchanger (C13) and activated carbon adsorber with particulate pre-filter (C16)

Stack S17, Process P14, Controls C14 and C17 – Wisconsin Oven Retort System (Natural Gas Fired, Maximum Heat Input: 1.5 MMBtu/hr) equipped with air-to-air heat exchanger (C14) and two activated carbon adsorbers with one particulate pre-filter (C17)

3. Pollutant: Mercury *

a. Limitations	b. Compliance Demonstration	c. Reference Test Methods, Recordkeeping and Monitoring Requirements
<p>(a) 0.000074 pounds per hour from each of stacks S12 and S13</p> <p>(b) 0.0030 pounds per hour from stack S17 [s. NR 445.07(1)(a), Wis. Adm. Code, s. 285.65(7), Wis. Stats.] *</p> <p>(3) The permittee shall maintain the following stack parameters for each of Stacks S12, S13, and S17:</p> <p>(a) The stack height shall be at least 25 feet above ground level;</p> <p>(b) The stack may not be equipped with a rainhat or any other device which impedes the upward flow of the exhaust gases. [ss. 285.63(1)(a) and 285.65(3), Wis. Stats] *</p>	<p>[s. NR 407.09(4)(a)3.b., Wis. Adm. Code] *</p> <p>(3) Each heat exchanger and each carbon adsorber with particulate pre-filter shall be operated, maintained, and inspected in accordance with the manufacturer's recommendations. [s. NR 407.09(4)(a)3.b., Wis. Adm. Code] *</p> <p>(4) The permittee shall install, operate, and maintain instrumentation to monitor the pressure drop across each carbon adsorber and particulate pre-filter in inches of water and instrumentation to monitor temperature within each carbon adsorber in degrees Fahrenheit or Celsius (centigrade). [s. NR 439.055(1)(g), Wis. Adm. Code] *</p> <p>(5) All monitoring instrumentation shall be calibrated at least once per year. [s. 439.055(4), Wis. Adm. Code] *</p> <p>(6) The pressure drop across each carbon adsorber and particulate pre-filter shall be maintained within a range consistent with the manufacturer's recommendations. [s. NR 407.09(4)(a)1., Wis. Adm. Code] *</p> <p>(7) The temperature within each carbon adsorber shall not exceed 150 degrees Fahrenheit. [s. NR 407.09(4)(a)1., Wis. Adm. Code] *</p> <p>(8) The permittee shall maintain and follow a malfunction prevention and abatement plan for the carbon adsorbers with particulate pre-filters (C12 through C17) as required under I.ZZZ.1. [NR 439.11, Wis. Adm. Code] *</p>	<p>(3) The permittee shall keep records of all precautions taken to reduce the emissions of mercury according to I.E.3.a.(1) and I.E.3.b.(1). [s. NR 439.04(1)(d), Wis. Adm. Code] *</p> <p>(4) The permittee shall measure and record the pressure drop across each carbon adsorber and particulate pre-filter once for every 8 hours of source operation or once per day, whichever yields the greater number of measurements. [s. NR 439.055(2)(b)1., Wis. Adm. Code] *</p> <p>(5) The permittee shall keep records of all inspections, checks, and any maintenance or repairs performed on any heat exchanger, carbon adsorber, or particulate pre-filter, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code] *</p> <p>(6) The permittee shall keep records of all inspections, checks, maintenance, repairs, or calibrations performed on any pressure drop or temperature monitoring devices, containing the date of the action, initials of inspector, and the results. [s. NR 439.04(1)(d), Wis. Adm. Code] *</p> <p>(7) The permittee shall keep and maintain on-site technical drawings, blueprints or equivalent records of the physical stack parameters for each of Stacks S12, S13, and S17. [s. NR 439.04(1)(d), Wis. Adm. Code] *</p> <p>(8) The permittee shall notify the Department of any deviation from permit conditions according to the procedure in II.D.1.c. [s. NR 439.03(4), Wis. Adm. Code] *</p>

ZZZ. General Conditions Applicable to the Operation Permit.**1. Malfunction Prevention and Abatement Plan**

a. Limitations/Conditions	b. Compliance Demonstration
<p>(1) A malfunction prevention and abatement plan shall be prepared and followed for the plant. [s. NR 439.11, Wis. Adm. Code]</p> <p>(2) The malfunction prevention and abatement plan shall be in writing and updated as necessary, at least once every five years. [s. NR 439.11(1), Wis. Adm. Code]</p> <p>(3) All air pollution control equipment shall be operated and maintained in conformance with good engineering practices (i.e. operated and maintained according to manufacturer's specifications and directions) to minimize the possibility for the exceedance of any emission limitations. [s. NR 439.11(4), Wis. Adm. Code]</p>	<p>(1) The malfunction prevention and abatement plan shall be developed to prevent, detect and correct malfunctions or equipment failures which may cause any applicable emissions limitation to be violated or which may cause air pollution. [s. NR 439.11(1), Wis. Adm. Code]</p> <p>(2) This malfunction prevention and abatement plan shall include installation, maintenance and routine calibration procedures for the process monitoring and control equipment instrumentation. This plan shall require an instrumentation calibration at the frequency specified by the manufacturer, yearly or at a frequency based on good engineering practice as established by operational history, whichever is more frequent. Inspection and calibration shall also be conducted whenever instrumentation anomalies are noted. [ss. NR 407.09(1)(c)1.c., NR 439.055(4) and NR 439.11, Wis. Adm. Code]</p> <p>(3) The malfunction prevention and abatement plan shall require a copy of the operation and maintenance manual for the control equipment to be maintained on site. The plan shall contain all of the elements in s. NR 439.11(1)(a) - (h), Wis. Adm. Code. [s. NR 439.11, Wis. Adm. Code]</p>

ZZZ. General Conditions Applicable to the Operation Permit.**2. Stack Testing Requirements**

a. Limitations/Condition	b. Compliance Demonstration
<p>(1) If the compliance emission test(s) cannot be conducted within the time frames specified in this permit, the permit holder may request, and the Department may approve, in writing, an extension of time to conduct the test(s). [ss. NR 439.07 and 439.075(4), Wis. Adm. Code]</p> <p>(2) All testing shall be performed with the emissions unit operating at capacity or as close to capacity as practicable and in accordance with approved procedures. If operation at capacity is not feasible, the source shall operate at a capacity level which is approved by the Department in writing. [s. NR 439.07(1), Wis. Adm. Code]</p> <p>(3) The Department shall be notified at least 20 business days in advance of a compliance emission test, to provide the Department an opportunity to have a representative present to witness the testing procedures. The notification shall include submission of a test plan. Any alternative test methods require prior approval in writing. Alternatively, the Department accepts and encourages electronic submittals of test plans, uploaded through the permittee's Web Access Management System (WAMS) ID. For more details refer to the "Stack Testing Electronic Submittal Guidebook" on the DNR website. The notification and test plan shall be submitted to the Wisconsin Department of Natural Resources, Southeast Region Air Program, Waukesha Service Center, 141 NW Barstow St., Room 180, Waukesha, WI 53188 or an alternative address provided by the Department. [s. NR 439.07(2), Wis. Adm. Code]</p>	<p>(1) Two copies of the report on any compliance emission tests shall be submitted to the Department for evaluation within 60 days following the completion of tests. The emission test report shall be submitted to the Department of Natural Resources Southeast Region Air Program, Waukesha Service Center, 141 NW Barstow St., Room 180, Waukesha, WI 53188 or an alternative address provided by the Department. Alternatively, the Department accepts and encourages electronic submittals of test reports, uploaded through the permittee's Web Access Management System (WAMS) ID. For more details refer to the "Stack Testing Electronic Submittal Guidebook" on the DNR website. [s. NR 439.07(9), Wis. Adm. Code]</p>

ZZZ. General Conditions Applicable to the Operation Permit.**3. Compliance Reports/Records**

a. Limitations/Conditions	b. Compliance Demonstration
<p>(1) The permittee shall submit periodic monitoring reports. [s. NR 407.09(1)(c)3., Wis. Adm. Code]</p> <p>(2) The permittee shall submit periodic certification of compliance. [s. NR 407.09(4)(a)3., Wis. Adm. Code]</p> <p>(3) The records required under this permit shall be retained for at least five (5) years and shall be made available to department personnel upon request during normal business hours. [ss. NR 439.04 and NR 439.05, Wis. Adm. Code]</p>	<p>(1) The permittee shall submit a monitoring report which contains the results of monitoring or a summary of monitoring results required by this permit to the address of your assigned compliance engineer or an alternative address provided by the Department. Alternatively, the Department accepts and encourages electronic submittals of test plans, uploaded through the permittee's Web Access Management System (WAMS) ID.</p> <p>(a) The time period to be addressed by the report is the period from January 1 to December 31.</p> <p>(b) The report shall be submitted to the Department by March 1 after the reporting period.</p> <p>(c) All deviations from and violations of applicable requirements shall be clearly identified in the report.</p> <p>(d) Each submittal shall be certified by a responsible official as to the truth, accuracy and completeness of the report.</p> <p>(e) The content of the submittal is described in item D. of Part II of the operation permit and section NR 439.03(1)(b) Wisconsin Administrative Code. [ss. NR 407.09(1)(c)3. and NR 439.03(1)(b), Wis. Adm. Code]</p> <p>(2) The permittee shall submit an annual certification of compliance with the requirements of this permit to the address of your assigned compliance engineer or an alternative address provided by the Department. Alternatively, the Department accepts and encourages electronic submittals of test plans, uploaded through the permittee's Web Access Management System (WAMS) ID.</p> <p>(a) The time period to be addressed by the report is January 1 to December 31 of the preceding year.</p> <p>(b) The report shall be submitted to the Wisconsin Department of Natural Resources by March 1 after the reporting period</p> <p>(c) The information included in the report shall comply with the requirements of Part II, Section N of this permit.</p> <p>(d) Each report shall be certified by a responsible official as to the truth, accuracy and completeness of the report. [ss. NR 407.09(4)(a)3. and NR 439.03(1)(c), Wis. Adm. Code]</p>

ZZZ. General Conditions Applicable to the Operation Permit.	
4. Alternate Operating Scenario – Use of raw material not included in the permit application	
a. Limitations/Conditions	b. Compliance Demonstration
<p>(1) If the permittee uses a raw material not included in the permit application reviewed for this permit, the following requirements shall be met by the permittee:</p> <p>(a) The source has continuously had such design capability.</p> <p>(b) The use will not cause or exacerbate the violation of an ambient air quality standard or an ambient air increment.</p> <p>(c) The use is not prohibited by any permit, plan approval or special order applicable to the source.</p> <p>(d) The use will not result in a violation of any emission limit in chs. NR 405, 408, 409, 415 to 436 and 445, Wis. Adm. Code.</p> <p>(e) The use will not subject the source to any standard or regulation under section 112 of the Act (42 USC 7412).</p> <p>[ss. NR 407.09(2)(d), and NR 406.04(4)(a), Wis. Adm. Code; 13-KB-181]</p>	<p>(1) The permittee shall keep at the facility all calculations and supporting material required to demonstrate compliance with limitation I.ZZZ.4.a.(1). [s. NR 407.09(2)(b), Wis. Adm. Code; 13-KB-181]</p>

PART II
General Permit Conditions
For Direct Stationary Sources

A. Scope.

This permit is valid only for the structure, building, facility, equipment or operation specifically identified herein. All emissions authorized hereby shall be in compliance with the terms and conditions of all Parts of this permit. [s. 285.60(7), Wis. Stats.]

B. Emissions Prohibited.

Unless the Department has approved an exception under s. NR 436.03(2), Wis. Adm. Code, no person may cause, allow, or permit emissions of any air contaminant into the ambient air in excess of the limits set in chs. NR 400 to 499, Wis. Adm. Code. [s. NR 436.03(1), Wis. Adm. Code]

C. General Emission Limits.

C.1. Applicable to Insignificant Emissions Units.

The following general emission limitations may apply to one or more of the insignificant emission units identified in the preamble of the operation permit. It is the permittee's responsibility to comply with these requirements, if they do apply. Insignificant emission units typically are associated with inconsequential environmental impacts and present little potential for violations of these generally applicable requirements. If there were no observed, documented or known instances of noncompliance, certification of compliance is appropriate. Testing or monitoring to assure compliance is not required by the operation permit.

C.1.a. Section NR 415.05, Wis. Adm. Code - Particulate matter emission limits for processes;

C.1.b. Section NR 415.06, Wis. Adm. Code - Particulate matter emission limits for fuel burning installations;

C.1.c. Section NR 415.07, Wis. Adm. Code - Particulate matter emission limits for incinerators;

C.1.d. Section NR 423.03, Wis. Adm. Code - Solvent metal cleaning;

C.1.e. Section NR 485.05, Wis. Adm. Code - Visible emission limits for motor vehicles, internal combustion engines and mobile sources; and

C.1.f. Section NR 485.055, Wis. Adm. Code - Particulate emission limit for gasoline and diesel internal combustion engines.

C.2. Applicable to Significant and Insignificant Emissions Units.

The following general emission limitations may apply to both significant and insignificant emission units. It is the permittee's responsibility to comply with these requirements, if they apply. Testing or monitoring to assure compliance with these general emission limits is not required by the operation permit.

For each significant emission unit, if a more specific emission limit is included in the permit for any of the pollutants listed below, then compliance with that more specific limit will constitute compliance with the general emission limit.

For insignificant emission units, if there were no observed, documented or known instances of non-compliance, certification of compliance is appropriate.

C.2.a. No person may cause, allow, or permit particulate matter to be emitted into the ambient air which substantially contributes to

exceeding of an air standard, or creates air pollution. [s. NR 415.03, Wis. Adm. Code]

C.2.b. No person may cause, allow, or permit any materials to be handled, transported, or stored without taking precautions to prevent particulate matter from becoming airborne. Nor may a person allow a structure, a parking lot, or a road to be used, constructed, altered, repaired, sand blasted or demolished without taking such precautions. Such precautions shall include, but not be limited to the following [s. NR 415.04, Wis. Adm. Code]:

C.2.b.(1) Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, or construction operations. [s. NR 415.04(1)(a), Wis. Adm. Code]

C.2.b.(2) Application of asphalt, oil, water, suitable chemicals, or plastic covering on dirt roads, material stockpiles, and other surfaces which can create airborne dust, provided such application does not create a hydrocarbon, odor, or water pollution problem. [s. NR 415.04(1)(b), Wis. Adm. Code]

C.2.b.(3) Installation and use of hoods, fans and air cleaning devices to enclose and vent the areas where dusty materials are handled. [s. NR 415.04(1)(c), Wis. Adm. Code]

C.2.b.(4) Covering or securing of materials likely to become airborne while being moved on public roads, railroads, or navigable waters. [s. NR 415.04(1)(d), Wis. Adm. Code]

C.2.b.(5) Conduct of agricultural practices such as tilling of land or application of fertilizers in such manner as not to create air pollution. [s. NR 415.04(1)(e), Wis. Adm. Code]

C.2.b.(6) The paving or maintenance of roadway areas so as not to create air pollution. [s. NR 415.04(1)(f), Wis. Adm. Code]

C.2.c. No person may cause, allow or permit emission of sulfur or sulfur compounds into the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution. [s. NR 417.03, Wis. Adm. Code]

C.2.d. No person may cause, allow or permit organic compound emissions into the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution. No person may cause, allow or permit organic compounds to be used or handled without using good operating practices and taking reasonable precautions to prevent the spillage, escape or emission of organic compounds, solvents or mixtures. [s. NR 419.03, Wis. Adm. Code]

C.2.e. No person may cause, allow or permit the disposal of more than 5.7 liters (1.5 gallons) of any liquid Volatile Organic Compound (VOC) waste, or of any liquid, semisolid or solid waste materials containing more than 5.7 liters (1.5 gallons) of any VOC, in any one day from a facility in a manner that would permit their evaporation into the ambient air during the ozone season. This includes, but is not limited to, the disposal of VOC which must be removed from VOC control devices so as to maintain the control devices at their required operating efficiency. Disposal during the ozone season shall be by methods approved by the Department, such as incineration, recovery for reuse, or transfer in closed containers to an acceptable disposal facility, such that the quantity of VOC which evaporates into the ambient air does not exceed 15%

- (by weight) or 5.7 liters (1.5 gallons) in any one day, whichever is larger. [s. NR 419.04, Wis. Adm. Code]
- C.2.f. No person may cause, allow or permit emissions of carbon monoxide to the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution. [s. NR 426.03, Wis. Adm. Code].
- C.2.g. No person may cause, allow or permit emissions into the ambient air of lead or lead compounds which substantially contribute to the exceeding of an air standard or air increment, or which create air pollution. [s. NR 427.025, Wis. Adm. Code]
- C.2.h. No person may cause, allow, or permit nitrogen oxides or nitrogen compounds to be emitted to the ambient air which substantially contribute to the exceeding of an air standard or cause air pollution. [s. NR 428.03, Wis. Adm. Code]
- C.2.i. No person may cause, allow or permit emission into the ambient air of any substance or combination of substances in such quantities that an objectionable odor is determined to result unless preventive measures satisfactory to the Department are taken to abate or control such emission. [s. NR 429.03(1), Wis. Adm. Code *]
- C.2.j. Open burning is prohibited except as provided in s. NR 429.04, Wis. Adm. Code. [s. NR 429.04, Wis. Adm. Code *]
- C.2.k. [Note: Under the Wisconsin Recycling Law (Wisconsin Act 335), small businesses, commercial enterprises, and industries may not use burn barrels or engage in other kinds of open burning and may not be granted burning permits by municipalities. However, the prohibition on burn barrels does not apply to small businesses in which the owners reside at the same location and cannot separate their business waste from their household waste.]
- C.2.l. No person may cause, allow or permit emissions into the ambient air from any direct or portable source in excess of one of the visible emission limits specified in ch. NR 431, Wis. Adm. Code. Where the presence of uncombined water is the only reason for failure to meet the requirements of ch. NR 431, Wis. Adm. Code, such failure is not a violation of the chapter. [s. NR 431.03, Wis. Adm. Code]
- C.2.m. When the Department requires instrumentation to monitor the operation of air pollution control equipment, or to monitor source performance, the instrument shall measure operational variables with the following minimum accuracy,: [ss. NR 439.055(3), Wis. Adm. Code]
- C.2.n. The temperature monitoring device shall have an accuracy of 0.5% of the temperature being measured in degrees Fahrenheit or $\pm 5^{\circ}\text{F}$ of the temperature being measured, or the equivalent in degrees Celsius (centigrade), whichever is greater. [s. NR 439.055(3)(a), Wis. Adm. Code]
- C.2.o. The pressure drop monitoring device shall be accurate to within 5% of the pressure drop being measured or within ± 1 inch of water column, whichever is greater. [s. NR 439.055(3)(a), Wis. Adm. Code]
- C.2.p. The current, voltage, flow or pH monitoring device shall be accurate to within 5% of the specific variable being measured.
- C.2.q. At a minimum, all instruments used for measuring source or air pollution control equipment operational variables shall be calibrated yearly or at a frequency based on good engineering practice as established by operational history, whichever is more frequent. [ss. NR 439.055(4), Wis. Adm. Code]
- C.2.r. No person may cause, allow, or permit emissions into the ambient air of any hazardous substance in such quantity, concentration, or duration as to be injurious to human health, plant or animal life unless the purpose of that emission is for the control of plant or animal life. Hazardous substances include, but are not limited to, hazardous air contaminants listed in Tables A to C of s. NR 445.07, Wis. Adm. Code. [s. NR 445.03, Wis. Adm. Code *]
- C.2.s. Chapter NR 447, Wis. Adm. Code, applies to all air contaminant sources which may emit asbestos, to their owners and operators and to any person whose action causes the emission of asbestos to the ambient air, including demolition and renovation activities. Chapter NR 447, Wis. Adm. Code, establishes emission limitations for asbestos air contaminant sources, establishes procedures to be followed when working with asbestos materials and contains additional reporting and record keeping requirements for owners or operators of asbestos air contaminant sources in order to protect air quality. [ch. NR 447, Wis. Adm. Code]
- C.2.t. Owners and operators of a stationary source that manufactures, uses, stores, or otherwise handles more than a threshold quantity of a listed regulated substance, as determined under 40 CFR 68.115, must implement the Accidental Release Prevention Requirements of 40 CFR Part 68, no later than the latest of the following dates:
- C.2.t.(1) June 21, 1999;
- C.2.t.(2) Three years after the date on which a regulated substance is first listed under 40 CFR 68.130; or
- C.2.t.(3) The date on which a regulated substance is first present above a threshold quantity in a process.
- [40 CFR Part 68.10, s. 285.65(13), Wis. Stats.]
- C.2.u. No person may cause, allow or permit emissions of mercury in such quantity and duration as to cause the ambient air concentration to exceed 1 mg/m^3 , averaged over a 30-day period. [s. NR 446.03(1), Wis. Adm. Code]
- D. Reporting Requirements.**
- D.1. The Department shall be notified of the events in Table D1.:

Table D1.

Event	Timing
D.1.a. Hazardous substance air spill.	Immediate call: 1-800-943-0003
D.1.b. Malfunction or other unscheduled event which causes or may cause any emission limitation to be exceeded (except certain visible emissions limit exceedences detected by a continuous emission monitor, see s. NR 439.03(4)(a)2., Wis. Adm. Code.).	Notification by next business day of any such event at the source which is not reported in advance to the Department. Report the cause and duration of the exceedence, the period of time considered necessary for correction, and measures taken to minimize emissions during the period or will be taken to prevent future deviations.

Table D1.

Event	Timing
D.1.c. Deviation from any other condition specified in this permit.	Notification by next business day identifying the deviation, cause, duration and steps taken to prevent recurrence.

[ss. 285.65(10) and 292.11(2), Wis. Stats., and s. NR 439.03(4) and NR 445.16, Wis. Adm. Code]

D.2. Persons possessing or controlling a hazardous substance shall immediately notify the Department of any hazardous emission not in conformity with a permit or allowed by the Department under chs. NR 400 to 499, Wis. Adm. Code. Notice shall be given as required by s. 292.11, Stats., and ch. 706, Wis. Adm. Code.

D.3. The permittee shall report to the Department, in advance, schedules for planned shutdown and startup of air pollution control equipment and the measures to be taken to minimize the down time of the control equipment while the source is operating. Scheduled maintenance or any other scheduled event, including startup, shutdown or soot blowing procedures which have been approved by the Department under s. NR 436.03(2)(b), Wis. Adm. Code which causes an emission limit to be exceeded shall also be reported in advance to the Department. Advance reporting pursuant to this permit condition does not relieve any person from the duty to comply with any applicable emission limitations. Emissions in excess of the limits set in chs. NR 400-499, Wis. Adm. Code, may be allowed when the emissions are temporary and due to scheduled maintenance, startup or shutdown of operations carried out in accord with a plan and schedule approved by the Department. [s. NR 436.03(2)(b) and NR 439.03(6), Wis. Adm. Code]

D.4. The permittee shall furnish to the Department, within a reasonable time specified by the Department, any information that the Department may request in writing to determine whether cause exists to revise, revoke or suspend the operation permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Department copies of records required to be kept pursuant to this permit. [s. NR 407.09(1)(f)5., Wis. Adm. Code]

D.5. The permittee shall submit the results of monitoring required by the permit to the Department according to the schedule established in the permit. Any such report shall clearly identify all instances of deviations from permit requirements. All such reports shall be signed by the responsible official for the source. [s. 285.17(2), Wis. Stats., and s. NR 439.03(1)(b), Wis. Adm. Code]

D.6. Each permit reporting required under s. NR 439.03, Wis. Adm. Code, shall be certified by a responsible official as to its truth, accuracy and completeness. This certification and any other certification required under ch. NR 439, Wis. Adm. Code shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete. [s. NR 439.03(10), Wis. Adm. Code]

D.7. Except for information determined to be confidential under s. 285.70(2), Wis. Stats., or s. NR 2.19, Wis. Adm. Code, any information or reports obtained by the Department in the administration of ss. 285.01 to 285.87 and 299.15, Wis. Stats., will be available for public inspection at the offices of the Department. [s. 285.70(1), Wis. Stats., s. NR 2.19, Wis. Adm. Code]

D.8. All certifications made under s. NR 439.03, Wis. Adm. Code,

and all material statements and representations made in any report or notice required by the operation permit shall be truthful. [s. NR 439.03(11), Wis. Adm. Code]

D.9. Any document required under the operation permit and submitted to the Department, including reports, shall contain a certification by a responsible official that meets the requirements of s. NR 407.05(4)(j), Wis. Adm. Code. [s. NR 407.09(4)(a)1., Wis. Adm. Code]

D.10. Copies of all records and reports required under this permit shall be retained by the permittee for a period of 5 years except for records required to be maintained or reports required to be submitted under ss. NR 405.16(3) or NR 408.10(5), Wis. Adm. Code. Records and reports required under s. NR 405.16(3) or NR 408.10(5), Wis. Adm. Code, shall be maintained for a minimum of 10 years. [s. NR 439.04(2), Wis. Adm. Code]

E. Right of Entry and Inspection.

The permittee shall allow authorized representatives of the Department to enter upon the permittee's premises, to have access to and examine any record relating to emissions or required to be kept, and to make any inspection necessary to ascertain compliance with air pollution control laws and the terms of this permit. The Department may, for the purpose of determining a source's compliance with applicable requirements, sample or monitor at reasonable times production materials or other substances or operational parameters. [ss. 285.13 and 285.19, Wis. Stats., and s. NR 439.05, Wis. Adm. Code]

F. Malfunction Prevention and Abatement Plans.

The owner or operator of any direct or portable source which may emit hazardous substances or emits more than 15 pounds in any day or 3 pounds in any hour of any air contaminant for which emission limits have been adopted shall prepare a written malfunction prevention and abatement plan to prevent, detect, and correct malfunctions or equipment failures which may cause any applicable emission limitation to be violated or which may cause air pollution. Any such plan shall be carried out by the owner or operator. The plan shall be updated at least every 5 years and shall include the items listed in s. NR 439.11(1), Wis. Adm. Code. The Department may require the plan to be submitted for review and approval. All air pollution control equipment shall be operated and maintained in conformance with good engineering practices to minimize the possibility for the exceedance of any emissions limitations. [s. NR 439.11, Wis. Adm. Code]

Note: For this condition, 'source' refers to an individual emissions unit.

G. Emission Control Action Plan.

Any person responsible for the operation of a direct source which emits 0.25 tons or more per day of any air contaminant for which air standards have been adopted, the permittee shall prepare an emission control action program, consistent with good industrial practice and safe operating procedures, for reducing the emission of air contaminants into the outdoor atmosphere during periods of an air pollution alert, air pollution warning or air pollution

emergency declared under s. NR 493.03(2), Wis. Adm. Code. The emission control action program shall be designed to reduce or eliminate emissions of air contaminants into the outdoor atmosphere in accordance with the requirements set forth in Tables 2 to 6 of ch NR 493, Wis. Adm. Code. [s. NR 493.04, Wis. Adm. Code]

Note: For this condition, 'direct source' refers to an entire facility.

H. Change in Ownership or Control.

In the event of a change in ownership or operational control of a source, the permittee shall notify the Department in writing. The notification should include a written agreement between the current and new owner or operator which sets forth a specific date for transfer of permit responsibility, coverage and liability. [s. 285.60(2)(a), Wis. Stats., and s. NR 407.11(1)(d), Wis. Adm. Code.]

I. Permit Flexibility, Revision, Suspension, and Revocation.

- I.1. Changes to the source which are not modifications and changes in permit content are regulated under the permit flexibility provisions of s. 285.60(4), Wis. Stats., and s. NR 407.025, Wis. Adm. Code, and the operation permit revision provisions in ss. NR 407.11, NR 407.12, NR 407.13, NR 407.14, and NR 407.16, Wis. Adm. Code.
- I.2. An operation permit may be suspended or revoked, in whole or in part, for cause. [ss. NR 407.09(1)(f)3. and NR 407.15, Wis. Adm. Code.]
- I.3. A construction permit may be suspended, revoked or revised, in whole or in part, for cause. [s. NR 406.11, Wis. Adm. Code]

J. Construction, Reconstruction, Replacement, Relocation or Modification.

- J.1. Unless the replacement is authorized by a construction permit or is exempt under s. NR 406.04, Wis. Adm. Code, replacement of the source(s) covered by this permit is prohibited. [s. 285.60(1)(a), Wis. Stats.]
- J.2. No person may commence construction, reconstruction, replacement, relocation or modification of a stationary source unless the person has a construction permit for the source or unless the source is exempt from the requirement to obtain a permit under s. 285.60(5), Wis. Stats., or under ch. NR 406, Wis. Adm. Code. Applications for the construction permit shall be submitted on forms which are available from the Department at its Madison headquarters, Department Regional Headquarters and Service Center Offices or online. [s. 285.60(1)(a), Wis. Stats., NR 406.03(1m)(a), Wis. Adm. Code]

Note: The address of the Madison headquarters is: Wisconsin Department of Natural Resources, Bureau of Air Management, PO Box 7921, Madison, WI 53707-7921, Attention: Construction permits. The internet web address is: <http://dnr.wi.gov/topic/AirPermits/Forms.html>.

- J.3. For new or modified sources for which no construction permit is required, the application for an operation permit shall be filed before the source commences construction or modification. [s. NR 407.04(1)(b), Wis. Adm. Code]

K. Circumvention.

- K.1. The installation or use of any article, machine, equipment, process, or method which conceals an emission which would otherwise constitute a violation of an applicable rule is prohibited unless written approval has been obtained from the Department.

Such concealment includes, but is not limited to, the use of gaseous diluents to achieve compliance and the unnecessary separation of an operation into parts to avoid coverage by a rule that applies only to operations larger than a specified size. [s. NR 439.10, Wis. Adm. Code]

- K.2. No one may render inaccurate any monitoring device or method required under ch. NR 439, Wis. Adm. Code, or in this permit. [s. NR 439.03(12), Wis. Adm. Code]

- K.3. No person may knowingly falsify, tamper with, render inaccurate or fail to install any monitoring device or method required to be maintained or followed under the Clean Air Act. [Clean Air Act s. 113(c)(2)(C); 42 USC 7413(c)(2)(C), s. 285.65(13), Wis. Stats.]

L. Civil/Criminal Liability.

- L.1. Any owner or operator who fails to construct a stationary source in accordance with the application as approved by the Department; any owner or operator who fails to construct and operate a stationary source in accordance with conditions imposed by the Department under s. 285.65, Wis. Stats.; any owner or operator who modifies a stationary source in violation of conditions imposed by the Department under s. 285.65, Wis. Stats.; or any owner or operator who commences construction or modification of a stationary source without applying for and receiving a permit as required under chapters NR 405, NR 406 or NR 408, Wis. Adm. Code, shall be considered in violation of s. 285.60, Wis. Stats. [s. NR 406.10, Wis. Adm. Code]
- L.2. Nothing in the operation permit shall be construed to relieve the permit holder from civil and/or criminal penalties under ss. 285.87 and 299.15, Wis. Stats., for violation of the terms or conditions of this permit, or for violation of ss. 285.01 to 285.87, 292.11(2) and 299.15, Wis. Stats., or of any rule or any special order issued under those sections except where the operation permit shield provisions of s. 285.62(10)(b), Wis. Stats., are applicable. [s. 285.62(10)(b), Wis. Stats.]
- L.3. The permittee has the duty to comply with all applicable conditions in chs. NR 400-499, air quality standards of ch. NR 404, control strategies of all local, state and federal regulations which are part of the state implementation plan and applicable limits in the permit. [s. NR 406.13, Wis. Adm. Code, s. 285.60(7), Wis. Stats., s. 285.65(13), Wis. Stats.]
- L.4. Any noncompliance with this permit constitutes a violation of the Wisconsin statutes, the federal clean air act, or both, and is grounds for enforcement action; for permit suspension, revocation or revision; or, if allowed under s. 285.62(6), Wis. Stats., for denial of an operation permit renewal application. [s. NR 407.14, NR 407.15, and NR 407.09(1)(f)1., Wis. Adm. Code, s. 285.60(7), Wis. Stats. and 42 USC 7661a, s. 285.65(13), Wis. Stats.]
- L.5. The following items are provided per s. NR 407.09(1)(d) and (f), Wis. Adm. Code:
 - L.5.a. It is not a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this permit. [s. NR 407.09(1)(f)2., Wis. Adm. Code]
 - L.5.b. The filing of a request by the permittee for a permit revision or revocation, or the filing of a notification of planned changes under s. NR 407.025, Wis. Adm. Code, or of anticipated noncompliance, does not stay any permit condition. [s. NR 407.09(1)(f)3., Wis. Adm. Code]

L.5.c. The issuance of this permit does not convey any property rights of any sort, or any exclusive privilege, nor does it authorize any injury to private property or any invasion of personal rights. [s. NR 407.09(1)(f)4., Wis. Adm. Code]

L.5.d. The provisions of this permit are severable. In the event of a successful challenge to any portion of the permit, all other portions of the permit remain valid and effective. [s. NR 407.09(1)(d), Wis. Adm. Code]

M. Recordkeeping Requirements.

M.1. The permittee shall maintain the following records, per s. NR 439.04(1), Wis. Adm. Code:

M.1.a. Records of all sampling, testing and monitoring conducted or required under chs. NR 400 to 499, Wis. Adm. Code, or under this permit. Records of sampling, testing or monitoring shall include the following [s. NR 439.04(1)(a), Wis. Adm. Code]:

M.1.a.(1) The date, monitoring site and time and duration of sampling, testing, monitoring or measurements. [s. NR 439.04(1)(a)(1), Wis. Adm. Code]

M.1.a.(2) The dates the analyses were performed. [s. NR 439.04(1)(a)(2), Wis. Adm. Code]

M.1.a.(3) The company or entity that performed the analysis. [s. NR 439.04(1)(a)(3), Wis. Adm. Code]

M.1.a.(4) The analytical techniques or methods used, including supporting information such as calibration and maintenance records of all original recording charts for continuous monitoring instrumentation including emissions or equipment monitors. [s. NR 439.04(1)(a)(4), Wis. Adm. Code]

M.1.a.(5) The results of the analyses. [s. NR 439.04(1)(a)(5), Wis. Adm. Code]

M.1.a.(6) The relevant operating conditions that existed at the time of sampling, testing, monitoring or measurement. [s. NR 439.04(1)(a)(6), Wis. Adm. Code]

M.1.b. Records detailing all malfunctions which cause any applicable emission limitation to be exceeded, including logs to document the implementation of the plan required under s. NR 439.11, Wis. Adm. Code. [s. NR 439.04(1)(b), Wis. Adm. Code];

M.1.c. Records detailing all activities specified in any compliance schedule approved by the Department under chs. NR 400 to 499, Wis. Adm. Code. [s. NR 439.04(1)(c), Wis. Adm. Code]; and

M.1.d. Any other records relating to the emission of air contaminants which may be requested in writing by the Department. [s. NR 439.04(1)(d), Wis. Adm. Code];

M.2. The owner or operator of a source constructed or last modified prior to July 1, 2004, with non-exempt, potential to emit emissions of a hazardous air contaminant less than or equal to the applicable threshold in column (c), (d), (e), or (f) of Table A, B or C of s. NR 445.07, Wis. Adm. Code, shall maintain records in accordance with s. NR 439.04(1) and (2), Wis. Adm. Code, starting no later than June 30, 2007. [s. NR 445.08(6)(b), Wis. Adm. Code *]

M.2.a. In addition to meeting the recordkeeping requirements of s. NR 439.04(1) and (2), Wis. Adm. Code, an owner or operator of any compression ignition internal combustion engine for which s. NR 445.09, Wis. Adm. Code applies shall: [s. NR 445.09(6), Wis. Adm. Code]

M.2.a.(1) Keep records of maintenance performed on any particulate matter emission control device used to comply with s. NR 445.09(3), Wis. Adm. Code. [s. NR 445.09(6)(a), Wis. Adm. Code]

M.2.a.(2) For any engine that stays or that is intended to stay in a single location for any 12 consecutive month period, keep the following records; [s. NR 445.09(6)(b), Wis. Adm. Code]:

M.2.a.(2)1. The amount fuel oil combusted on a monthly basis for any engine not using a certified control device. [s. NR 445.09(6)(b)1., Wis. Adm. Code]

M.2.a.(2)2. The power rating and days of operation of any CI engine used to substitute power under s. NR 445.09(1)(d), Wis. Adm. Code. [s. NR 445.09(6)(b)2., Wis. Adm. Code]; and

M.2.a.(2)3. The cost of rebuilding any CI engine on a monthly basis. [s. NR 445.09(6)3., Wis. Adm. Code]

M.3. Owners and operators of facilities required to file emission inventory reports shall keep accurate and reliable records sufficient to enable verification of the reports by the Department. [s. NR 438.03(4), Wis. Adm. Code]

M.4. Copies of all records and reports required under this permit shall be retained by the permittee for a period of 5 years or for such other period as may be specified by the Department. [s. NR 439.04(2), Wis. Adm. Code]

M.5. Source obligation for Prevention of Significant Deterioration includes project records demonstrating the calculated difference between projected actual emissions and baseline actual emissions does not exceed the level that is considered significant for the air contaminant. Before beginning actual construction of a project, the owner or operator shall meet the record requirements and make available those records for the Department or general public upon request. [s. NR 405.16(3) and (4), Wis. Adm. Code]

M.6. Source obligation for Major Source Nonattainment Area Construction Permits includes project records demonstrating the calculated difference between projected actual emissions and baseline actual emissions does not exceed the level that is considered significant for the air contaminant. Before beginning actual construction of a project, the owner or operator shall meet the record requirements and make available those records for the Department or general public upon request. [s. NR 408.10(5) and (6), Wis. Adm. Code]

M.7. Except for information determined to be confidential under s. 285.70(2), Wis. Stats. or s. NR 2.19, Wis. Adm. Code, any information or reports obtained by the Department in the administration of ss. 285.01 to 285.87 and 299.15, Wis. Stats., will be available for public inspection at the offices of the Department. [s. 285.70(1), Wis. Stats., s. 2.19, Wis. Adm. Code]

N. Compliance Certification.

N.1. The permittee shall submit operation compliance certifications to the Department. [s. NR 439.03 (1)(c) and (9), Wis. Adm. Code]

N.2. The certification shall be submitted according to the schedule established in the operation permit. [s. NR 439.03(1)(c), Wis. Adm. Code]

N.3. The certification shall include the following information: [s. NR 439.03(8), Wis. Adm. Code]:

N.3.a. Identification of each permit term or condition that is the basis of the certification. [s. NR 439.04(8)(a), Wis. Adm. Code];

- N.3.b. The compliance status of the source with respect to each term or condition identified in N.3.a. [s. NR 439.04(8)(b), Wis. Adm. Code];
- N.3.c. Information on whether compliance was continuous or intermittent. [s. NR 439.04(8)(c), Wis. Adm. Code];
- N.3.d. The method(s) used for determining the compliance status, currently and over the previous 12 month period. [s. NR 439.04(8)(d), Wis. Adm. Code];
- N.3.e. Compliance status with respect to 40 CFR 68 (Accidental Release Prevention) including registration and submission of the risk management plan, as specified in 40 CFR 68.160 and 68.150, respectively, if applicable; and
- N.3.f. Other information the Department may require, as specified in the operation permit, to determine the compliance status of the source. [s. NR 439.03(8)(e), Wis. Adm. Code]

O. Required Air Emission Inventory Reports.

The permittee shall annually submit to the Department an emission inventory report of annual, actual emissions or throughput information in accordance with ch. NR 438, Wis. Adm. Code. [s. NR 438.03, Wis. Adm. Code]

P. Annual Emission Fees.

The permittee shall pay an annual fee to the Department at the rate specified in s. 285.69(2), (2e) and (2m), Wis. Stats. [s. NR 410.04, Wis. Adm. Code]

Q. General Provisions for National Emission Standards for Hazardous Air Pollutants (NESHAP) and New Source Performance Standard (NSPS).

- Q.1. The general provisions in ch. NR 460, Wis. Adm. Code, apply to any permittee that is affected or becomes affected by a standard promulgated by EPA under section 112 of the act (42 USC 7412). [s. NR 460.01, Wis. Adm. Code]
- Q.2. The general provisions in chapter NR 440, subchapter I, Wis. Adm. Code apply to any permittee that is affected or becomes affected by a standard promulgated by EPA under section 111 of the act (42 USC 7411). [ch. NR 440, subch. I, Wis. Adm. Code]

R. Stratospheric Ozone Protection.

- R.1. State Requirements. (Call 1-608-264-6049 for information)
- R.1.a. During the salvaging, dismantling or transporting of refrigeration equipment, no person may knowingly or negligently release ozone-depleting refrigerant to the environment, except for minimal releases that occur as a result of efforts to transfer ozone depleting refrigerant into storage tanks. [s. NR 488.03(1), Wis. Adm. Code *]
- R.1.b. No person may knowingly or negligently release from a storage tank to the environment ozone-depleting refrigerant that was removed during the salvaging, dismantling or transporting of refrigeration equipment, except for minimal releases that occur as a result of efforts to transfer ozone-depleting refrigerant into refrigeration equipment or other storage tanks. [s. NR 488.03(2), Wis. Adm. Code *]
- R.1.c. No person may salvage or dismantle any refrigeration equipment unless [s. NR 488.03(3), Wis. Adm. Code]:
- R.1.c.(1) That person holds and prominently displays an annual registration of certification obtained from the Department under s. NR 488.04, Wis. Adm. Code. [s. NR 488.03(3)(a), Wis. Adm. Code *];

R.1.c.(2) That person uses refrigerant recovery equipment approved by the Department under s. NR 488.07, Wis. Adm. Code, to transfer remaining ozone-depleting refrigerant from each piece of refrigeration equipment into storage tanks [s. NR 488.03(3)(b), Wis. Adm. Code]; and

R.1.c.(3) Individuals who use the approved refrigerant recovery equipment have, or are working under the direct supervision of individuals who have, the qualifications required under s. NR 488.08, Wis. Adm. Code. [s. NR 488.03(3)(c), Wis. Adm. Code *]

R.1.d. Any person who sells, gives or transports refrigeration equipment to a scrap metal processor shall do the following: [s. NR 488.05(1), Wis. Adm. Code *]

R.1.d.(1) Transfer ozone-depleting refrigerant from the refrigeration equipment into a storage tank using approved refrigerant recovery equipment or obtain and possess documentation that another person performed the transfer. [s. NR 488.05(1)(a), Wis. Adm. Code*]; and

R.1.d.(2) Provide documentation to the scrap metal processor that he or she has complied with R.1.d.(1). [s. NR 488.05(1)(b), Wis. Adm. Code *]

Note: Sample forms for the documentation of compliance with R.1.d.(1) are available from the Bureau of Air Management CFC Program.

Exemption: R.1.d does not apply to a person who sells, gives or transports refrigeration equipment to a scrap metal processor when that processor has agreed in writing to transfer the ozone-depleting refrigerant into a storage tank using approved refrigerant recovery equipment and that the processor is registered with the Department under s. NR 488.04, Wis. Adm. Code. [s. NR 488.05, Wis. Adm. Code*]

R.1.e. Any person who transports, for the purposes of salvaging or dismantling, refrigeration equipment that contains ozone depleting refrigerant shall certify to the Department that person will not knowingly or negligently release ozone-depleting refrigerant to the environment, except for minimal releases that occur as a result of refrigerant recovery efforts. This certification shall be submitted annually, along with a description of the safe transport methods to be used, and the fees required under s. NR 488.11, Wis. Adm. Code. [s. NR 488.10(1), Wis. Adm. Code *]

S. Payment of Construction Permit Fees.

Any person who obtains a construction permit shall pay the application fee within thirty days of the date of the billing statement. [s. NR 410.03(4), Wis. Adm. Code]

T. Credible Evidence

Notwithstanding the compliance determination methods which the owner or operator of a source is authorized to use under this permit, any relevant information or appropriate method may be used to determine a source's compliance with applicable emission limitations. [s. NR 439.06, Wis. Adm. Code, 42 USC 7413(e), s. 285.65(13), Wis. Stats.]

U. Compliance Testing Requirements

U.1. Unless the Department requires or approves the performance of a test at less than capacity, all compliance emission tests shall be performed with the equipment operating at capacity or as close to capacity as practicable. [s. NR 439.07(1), Wis. Adm. Code]

U.2. The owner or operator of the source tested shall submit 2 copies of the emission test report to the Department within 60 days after completion of a compliance emission test. The emission test report shall include, but need not be limited to the information listed in s. NR 439.07(9)(a)-(m), Wis. Adm. Code. The emission test report shall be submitted to the Department of Natural Resources at the address specified in Part I of this permit or an alternative address provided by the facility's assigned compliance inspector. Alternatively, the Department accepts and encourages electronic submittals of test plans, uploaded through the permittee's Web Access management System (WAMS) ID. [s. NR 439.07(9), Wis. Adm. Code]

U.3. Unless more advance notice is required by an applicable requirement, the Department shall be notified in writing at least 20 business days in advance of a compliance emission test, including initial certification tests and relative accuracy tests performed under s. NR 439.09; Wis. Adm. Code, to provide the Department an opportunity to have a representative present to witness the testing procedures. The notice shall provide a test plan which includes, but need not be limited to, the information listed in s. NR 439.07(2)(a)-(f), Wis. Adm. Code. The notification and test plan shall be submitted to the Wisconsin Department of Natural Resources at the address specified in Part I of this permit or an alternative address provided by the facility's assigned compliance inspector. Alternatively, the Department accepts and encourages electronic submittals of test plans, uploaded through the permittee's Web Access management System (WAMS) ID. [s. NR 439.07(2), Wis. Adm. Code]

U.4. Whenever emission testing is required, the permittee shall use the reference test methods listed under U.4. of this section. An alternate method to these reference test methods may be used if approved in writing by the Department. [ss. NR 439.06 and NR 484.04, Wis. Adm. Code]

U.4.a. Reference Test Methods for Nonfugitive Particulate Matter: Whenever compliance emission testing is required for a nonfugitive particulate matter emission limitation, the permittee shall use the appropriate Method 5, 5A, 5B, 5D, 5E, 5F, 5G, 5H, 5I, or 17 in 40 CFR part 60, Appendix A, and when required Method 202 in 40 CFR part 51, Appendix M. [s. NR 439.06(1), Wis. Adm. Code]

U.4.b. Reference Test Methods for Nonfugitive PM₁₀ and PM_{2.5} Emissions: Whenever compliance emission testing is required for a nonfugitive PM₁₀ or PM_{2.5} emission limitation, the permittee shall use Method 201 or 201A and when required Method 202 in 40 CFR part 51, Appendix M. [ss. NR 439.06(1m) and NR 439.06(8), Wis. Adm. Code]

U.4.c. Reference Test Method for Sulfur Dioxide Emissions: Whenever compliance emission testing of a sulfur dioxide (SO₂) emission limitation is required, the permittee shall use Method 6, 6A, 6B, 6C, or 8 in 40 CFR part 60, Appendix A. [s. NR 439.06(2)(a), Wis. Adm. Code]

U.4.d. Reference Test Method for Volatile Organic Compound Emissions: Whenever compliance emission testing of a volatile organic compounds (VOC) emission limitation is required, the permittee shall use Method 18, 25, 25A or 25B in 40 CFR part 60, Appendix A. [s. NR 439.06(3)(a), Wis. Adm. Code]

U.4.e. Reference Test Method to Determine the Capture Efficiency of a Control System for Volatile Organic Compound Emissions: Whenever capture efficiency testing of VOC emissions is required, the permittee shall use Method 204,

204A, 204B, 204C, 204D, 204E, or 204F or the data quality objection method or lower confidence limit method in 40 CFR part 63, Subpart KK, Appendix A. When determining the overall emission reduction efficiency of a VOC control system, simultaneous measurements of both the capture efficiency of the system and the pollutant reduction efficiency of the control device may be required. [s. NR 439.06(3)(am), Wis. Adm. Code]

U.4.f. Reference Test Method to Determine Surface Coating Properties: Whenever the organic solvent content, the volume of solids, the weight of solids, the water content and the density of surface coatings, inks, and cleaning materials is required, the permittee shall use Method 24 or 24A in 40 CFR part 60, Appendix A. [s. NR 439.06(3)(b), Wis. Adm. Code]

U.4.g. Reference Test Method for Detecting Organic Compound Emission Leaks: Whenever the detection of organic compound emission leaks is required, the permittee shall use Method 21 in 40 CFR part 60, Appendix A. [s. NR 439.06(3)(c), Wis. Adm. Code]

U.4.h. Reference Test Method to Verify the Vapor Tightness of Gasoline Delivery Tanks: Whenever verification of the vapor tightness of gasoline delivery tanks is required, the permittee shall use Method 27 in 40 CFR part 60, Appendix A. [s. NR 439.06(3)(d), Wis. Adm. Code]

U.4.i. Reference Test Method for Carbon Monoxide Emissions: Whenever compliance emission testing of a carbon monoxide (CO) emission limitation is required, the permittee shall use Method 10, 10A, or 10B in 40 CFR part 60, Appendix A. [s. NR 439.06(4), Wis. Adm. Code]

U.4.j. Reference Test Method for Lead Emissions: Whenever compliance emission testing of a lead (Pb) emission limitation is required, the permittee shall use Method 12 in 40 CFR part 60, Appendix A. [s. NR 439.06(5), Wis. Adm. Code]

U.4.k. Reference Test Methods for Nitrogen Compound Emissions: Whenever compliance emission testing of a nitrogen compound (NO_x) emission limitation is required, the permittee shall use EPA Method 7, 7A, 7B, 7C, 7D, or 7E in 40 CFR part 60, Appendix A. [s. NR 439.06(6)(a), Wis. Adm. Code]

U.4.l. Reference Test Methods for Total Reduced Sulfur Emissions: Whenever compliance emission testing of a total reduced sulfur (TRS) emission limitation is required, the permittee shall use EPA Method 15A, 16, 16A, or 16B in 40 CFR part 60, Appendix A. [s. NR 439.06(7)(a), Wis. Adm. Code]

U.4.m. Reference Test Method for Visible Emissions: Whenever emission testing of a visible emission limitation is required, the permittee shall use Method 9 in 40 CFR part 60, Appendix A. [s. NR 439.06(9)(a)1., Wis. Adm. Code]

U.4.n. Reference Test Method for a "No Visible Emissions" Requirement: Whenever compliance emission testing is required for a no visible emission limitation, the permittee shall use Method 22 in 40 CFR part 60, Appendix A. [s. NR 439.06(9)(b), Wis. Adm. Code]

Appendix EE

TRC Environmental Corporation Letter with MPAP

March 31, 2025

Melissa Bitter
Client Team Leader
Foth Infrastructure & Environment, LLC
7044 South Ballpark Drive, Suite 200
Franklin, WI 53132

Subject: Malfunction Prevention and Abatement (MPAP) Revisions
Veolia ES Technical Solutions, LLC
Port Washington, Wisconsin

Melissa Bitter:

Foth Infrastructure & Environment, LLC (Foth) retained TRC to review and revise the MPAP for the Veolia ES Technical Solutions, LLC (Veolia) facility located at 1275 Mineral Springs Drive in Port Washington, Wisconsin. Our review included a site visit to the facility to review current site contacts, history and documentation of system reviews, and determination of system changes that may have occurred since the original, September 20, 2019, MPAP was prepared. Please find the attached revised MPAP which includes the following specific revisions:

- Table 2: List of Responsible Personnel. Most of the contact information out of date and was updated with this revision.
- Table 4: Maintenance Activity, Calibration and Spare Part Inventory. Some activity descriptions and frequencies were updated to be consistent with current practices.
- Figure 4-2: Process & Instrument Diagram. The location of the chillers and piping routing were updated based on observations and discussion during the site visit.

Pursuant to NR 670.014(1), Wisconsin Administrative Code, I certify that I have reviewed these revisions to Veolia's MPAP.

Sincerely,



Leo H. Tramm, P.E.
Technical Director, Process and Pollution Control Engineering

Attachment 1

Malfunction Prevention and Abatement Plan



TITLE:	MALFUNCTION PREVENTION AND ABATEMENT PLAN	DOCUMENT NUMBER:	999A106		
WRITTEN BY:	Phillip Ditter	DATE WRITTEN:	12/9/2011		
REVISION NUMBER:	8	REVISION DATE:	3/21/2025		
APPROVED BY:		APPROVED DATE:			
APPROVER'S TITLE:		PAGE:	1	OF	29

1.0 PURPOSE:

The purpose of this Malfunction Prevention and Abatement Plan (MPAP) is to establish inspection, maintenance and corrective action procedures to prevent the malfunction of air pollution control devices and the associated processes that may cause an applicable emission limit to be violated or which may cause air pollution. This plan is being adopted to ensure compliance with facility Air Pollution Control Operating Permits and Wisconsin regulations under §NR 439.11, Wisconsin Administrative Code (WAC).

2.0 SCOPE:

Pursuant to s. NR 439.11(1), a MPAP is required for sources that may emit *hazardous substances*¹, or that emits more than 15 pounds in any day or 3 pounds in any hour of any *air contaminant*² for which emission limits have been adopted. For the purpose of assessing the applicability of this requirement for individual process that are present at Veolia's Port Washington, WI Mineral Springs Drive facility:

- 1.A hazardous substance has been assumed to include any air pollutant regulated: 1) under chapter NR 445, Wis. Adm. Code; 2) as a federal hazardous air pollutant (HAP); or 3) as a toxic or flammable pollutant under Risk Management Program (RMP) requirements codified under 40 CFR 68;
- 2.The pollutants expected to be emitted from each process line and the emission rates thereof have been considered based on recent air emission inventory calculations (2017 reporting year); and
- 3.Particulate emissions sources that are vented to air pollution control equipment that exhausts inside the building have been excluded.

Based on these criteria, this MPAP is applicable to this facility and covers the permitted processes and emission control devices associated with the recycling of mercury containing lamps and the recovery of elemental mercury which are summarized in Table 1. In general, the operations summarized in Table 1 can be categorized into three groups: 1) lamp recycling; 2) mercury recovery; and 3) support operations (emergency generator). Each group

¹ Pursuant to s. 285.01(21), Wis. Stats., "hazardous substance" means any substance or combination of substances including any waste of a solid, semisolid, liquid or gaseous form which may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or which may pose a substantial present or potential hazard to human health or the environment because of its quantity, concentration or physical, chemical or infectious characteristics. This term includes, but is not limited to, substances which are toxic, corrosive, flammable, irritants, strong sensitizers or explosives as determined by the department.

² Pursuant to s. 285.01(1), Wis. Stats., "air contaminant" means dust, fumes, mist, liquid, smoke, other particulate matter, vapor, gas, odorous substances or any combination thereof but shall not include uncombined water vapor.

has similar elements for which a malfunction has the potential to cause an applicable emission limitation to be violated or cause air pollution. Such issues are addressed for each group in Section 6.

Given the relative complexities of the mercury recovery operations and associated air pollution controls and monitoring systems, a Process and Instrumentation Diagram (P&ID) is provided as Figure 4-2 that illustrates such relationships, which are also tabulated in Table 3. By way of a brief introduction, the primary controls for these operations include heat exchangers, pre-filters & carbon adsorbers, and condensers that are parametrically monitored to ensure proper operation. Though not a control device, the vacuum lines are essential for the capture of mercury emissions from the retort operations and, therefore, are parametrically monitored to ensure proper operation. The primary parametric monitors for these devices include pressure, temperature, and vacuum sensors, as well as pressure gauges and mercury meters, which are detailed in Section 5.

The required content of a MPAP is established under ss. NR 439.11(1)(a)-(h), Wis. Adm. Code. Of these requirements, all but ss. NR 439.11(e) & (h) are understood to apply exclusively to sources that are equipped with air pollution control equipment. Such equipment is listed in Table 1, which primarily includes dry filters (C01, C04), and carbon adsorption (C02, C05, C09, C10, C11, C15, C16, and C17). Several carbon adsorbers associated with the mercury recovery retort ovens are preceded by air-to-air heat exchangers (C12, C13, C14) that serve to reduce the temperature of the flue gas to levels necessary to ensure proper operation of the receiving carbon adsorbers (C15, C16, C17). Although the heat exchangers are not air pollution control devices in so far as they do not directly control emissions, they are integral to the proper operation of the carbon adsorbers and, therefore, are considered as part of the air pollution control equipment for the purpose of this MPAP. The Packed Column and Wisconsin Oven Condenser Systems listed in Table 1 are used for product (mercury) recovery; however, they are conservatively handled as air pollution control equipment for the purpose of this MPAP because they must function properly to adequately recover mercury and leave residual levels in the exhaust stream that can be effectively controlled via downstream adsorbers.

The air pollution control equipment, including dry filters, carbon adsorbers including any associated upstream heat exchangers and condensers are subject to each of the requirements under ss. NR 439.11(1)(a)-(h), Wis. Adm. Code.

The only source listed in Table 1 that does not have an air pollution control device is the emergency generator.

The emergency generator, is therefore, understood to be subject only to the following MPAP content requirements:

- *NR 439.11(1)(e): A description of the corrective procedures that will be taken in the event of a malfunction or failure which results in the exceedance of the applicable emission limitation. These corrective procedures shall achieve and maintain compliance with the applicable emission limitations as expeditiously as possible but not longer than the time necessary to discontinue operation of the source consistent with safe operating procedures.*
- *NR 439.11(1)(h): Such other information as the department may deem pertinent.*

Regarding the first of these two conditions, the general procedure in Section 7.1 of this MPAP is used, as applicable, for all process lines that are subject to the MPAP requirements. As for the second condition, to date, the WDNR has not specified any other information as having been deemed pertinent for these process lines.

This procedure contains a detailed description of each process or control device as well as the inspection, monitoring, maintenance and repair procedures necessary to demonstrate compliance with applicable facility air pollution control permits and regulations. For each process and control device, key operating parameters have been defined. Where applicable a minimum, low warning, high warning and maximum level has been set. The range between the minimum and maximum is considered the normal operating range for the process or equipment. The low warning and high warning levels have been established as a tool to be used by facility management to prevent a system from exceeding a permit limit or to further the facility's emission reduction goals.

In addition to this procedure the facility also maintains a Contingency Plan, as required under the hazardous waste regulations and the facility hazardous waste storage and treatment permit.

3.0 USER:

Operations Manager: The Operations Manager has overall responsibility for the implementation of this SOP and providing oversight to ensure that the SOP is properly followed by all personnel within the facility. As part of these responsibilities the Operations Manager will designate personnel responsible for conducting inspections, performing preventative maintenance, and repairs on the control equipment.

Facility Emergency Coordinator: The Facility Emergency Coordinator (EC) will be responsible for implementing an appropriate response to any conditions that may indicate an exceedance of air permit condition or the exceedance of a regulatory emission limit.

Table 2 provides a tabulated summary of personnel responsible for inspecting, maintaining, and repairing the control equipment that is covered under this MPAP, as listed in Table 1. Also included in Table 2 are WDNR air contacts familiar with the facility's operations, as well as external contacts (e.g., consultants) that may be of assistance in the event of a malfunction that results in a permit deviation that may be subject to deviation and/or release reporting requirements.

4.0 DOCUMENTATION/FORMS:

The controlled copy of the MPAP is maintained electronically on the Port Washington Operations Team Drive and is accessible to all employees. All associated documents referenced in the MPAP are also available electronically to all employees either individually or through hyperlinks contained in this plan. The facility currently uses a computerized maintenance management system. The system is a commercially available package titled COGZ Maintenance Management System and is sold and supported by COGZ Systems, LLC.

Below is an outline of the MPAP structure with links to forms referenced within the document.

- Malfunction Prevention and Abatement Plan
 - Attachment A - Forms
 - Emission Controls Weekly Inspection Form, ([999F023](#))
 - Air Monitoring Log, ([999F040](#))
 - Retort Batch Worksheet ([999F070](#))
 - Verification Form ([999F028](#))
 - Sample Work Order ([WO 6416](#))
 - Attachment B - [Key Operating Parameters](#)
 - Attachment C - [Malfunction Cause and Detection Review](#)

Printed copies of documents and forms are classified as uncontrolled copies and are representative of the Plan when printed. In order to ensure that the current version of the document or form is being used, employees should use the electronic documents maintained in the Port Washington Operations Team Drive.

5.0 SPECIALIZED EQUIPMENT:

The control system for the retort ovens and the monitoring of emission control equipment will require the use of monitoring and measuring equipment. Below is a listing of the categories of this equipment and the inspection and calibration requirements. Table 3 provides a summary of recovery operation sensors and monitors.

5.1 Vacuum/Pressure Sensors

Vacuum/pressure sensors (PIT) and differential pressure sensors (PDT or ΔP Sensor) are used to monitor the process and emission controls. The sensors being used are calibrated and verified vacuum sensors with an operating range suitable for the ranges specified in Attachment B. The output from each sensor are connected to a process logic control that will monitor and record the vacuum level reading.

Prior to startup of a retort oven the retort operator will review the vacuum level readings from each sensor. If any sensor is out of range, the process will not be started. The reason for the sensor being out of range will be

investigated and corrected. The investigation of a sensor being out of range will include a visual inspection of the drums or kettles in the oven as well as inspection of the piping connecting those vessels to the vacuum system and the vacuum monitoring system.

Annual calibration of the vacuum sensors will be performed by an outside contractor. The results of the calibration will be kept in the maintenance files and tracked using the facility's computerized maintenance management system.

5.1.1 Magnehelic & Photohelic Gauges

Magnehelic® and Photohelic® gauges may be used to measure the pressure drop across various emission control devices in units of inches of water column (in-H₂O). The operating range of the magnehelic is dependent on the equipment being monitored. The magnehelic gauges on the control device(s) are calibrated at least annually utilizing a factory calibrated manometer. The calibration records will be documented on a verification form, (999F028), and kept in the maintenance files and tracked using the computerized maintenance management system. The manometer to be used for magnehelic calibration is calibrated on an annual basis and the records of this calibration are kept in the maintenance files and tracked on the computerized maintenance management system files.

Pressure drop monitoring devices shall be accurate to within 5 percent of the pressure drop being measured or within ± 1 inch of water column, whichever is greater, pursuant to s. NR 439.055(3)(c), Wisconsin Administrative Code.

5.2 Temperature Probes/Thermocouples

Thermocouples and resistance temperature detectors (RTD), or thermometers may be used to monitor temperatures of various devices – each of which is discussed in Sections 5.2.1, 5.2.2, and 5.2.3, respectively. In accordance with s. NR 439.055(3)(a), Wisconsin Administrative Code, the temperature monitoring device shall have an accuracy of 0.5 percent of the temperature being measured in degrees Fahrenheit (°F) or $\pm 5^\circ\text{F}$ of the temperature being measured, or the equivalent in degrees Celsius (centigrade), whichever is greater.

5.2.1 Thermocouples

Thermocouples (T/C) are used to monitor oven and exhaust gas temperatures. The temperature range of each thermocouple is dependent on the oven or point being monitored. All thermocouples are calibrated prior to installation, and calibrated thereafter annually or in accordance with manufacturer specifications, whichever is more frequent. Calibration records are kept in the maintenance files and tracked on the computerized maintenance management system files.

5.2.2. Resistance Temperature Detectors

Resistance thermal detectors (RTD) are used to monitor temperatures within the emission control equipment by using before and after temperature monitoring sensors for recording and monitoring purposes. The temperature range of each RTD is dependent on the location within the system and the anticipated operating temperatures. All RTDs are calibrated prior to installation and calibrated thereafter annually or in accordance with manufacturer specifications, whichever is more frequent. Calibration records are kept in the maintenance files and tracked on the computerized maintenance management system files.

5.2.3 Thermometers

Analog thermometers are used to measure the temperature associated with several carbon units and for spot checking temperatures. A functional check of these thermometers is performed annually. Records of the functional checks will be kept in the maintenance files and tracked on the computerized maintenance management system files.

5.3 Mercury Meters

Mercury monitoring may be performed using Jerome 431-X, Mercury Instruments VM-3000, and rented mercury meters, as discussed in Sections 5.3.1 through 5.3.3, respectively. Such equipment may be used to assess conformance with mercury permit limits ranging from 0.020 to 0.9469 milligrams of mercury vapor per cubic meter (mg-Hg/m³).

5.3.1 Jerome 431-X

The Jerome 431-X is a direct reading mercury vapor analyzer. The Jerome 431-x utilizes a gold foil technology for the detection of mercury vapors and has an operating range of 0.001 to 0.999 mg-Hg/m³. The Jerome 431-X meters are calibrated annually, and the calibration records are kept in the maintenance files and tracked on the computerized maintenance management system files. The functionality of the Jerome 431-X is checked monthly by performing side by side testing with the Jerome meters and a VM-3000 meter (as discussed below). A deviation of less than +/- 0.005 mg/m³ is considered to be within the acceptable range, based on manufacturer specifications.

5.3.2 Mercury Instruments VM-3000

The VM-3000 meter is calibrated annually, and the calibration records are kept in the maintenance files and tracked on the computerized maintenance management system files. The functionality of the VM-3000 is checked monthly by performing side by side testing with the Jerome meters (as discussed above). A deviation of less than +/- 0.005 mg/m³ is considered to be within the acceptable range, based on manufacturer specifications.

5.3.3 Rented Mercury Meters

In the event that it is necessary to rent a mercury meter, a copy of the calibration for that meter will be obtained at the time of the rental.

6.0 PROCEDURES:

As discussed in Section 2, the operations summarized in Table 1 can generally be categorized into three groups: 1) lamp recycling; 2) mercury recovery; and 3) support operations (emergency generator). Each grouping is further discussed in Sections 6.1 and 6.2, respectively, relative to common elements for which a malfunction has the potential to cause an applicable emission limitation to be violated or cause air pollution. Table 4 provides a summary of the maintenance activities, calibration frequency, and spare parts inventory information for the control equipment and parametric monitors summarized in Table 3. Any specialized tools and equipment needed to perform maintenance activities are identified in Section 6 or within the computerized maintenance management system.

6.1 Lamp Recycling

Process descriptions for P01 and P08 are presented in Sections 6.1.1 and 6.1.2, respectively, along with corresponding key operating parameters for the emission control devices for this process and associated permit limits, where applicable. The corrective action procedure that will be taken in the event of a malfunction or failure that results in the exceedance of an applicable emission limitation is presented in Section 7.2.

6.1.1 Process P01 – Model 2000 Lamp Processor (Blue)

The Model 2000 Lamp Processor is a dry separation process that is used to separate the individual components of intact or crushed fluorescent lamps for reuse or recycling. The system is comprised of a feed belt, followed by a breaker and crusher for sizing. The sized pieces are then conveyed to a rotary trommel where they are separated into mercury containing phosphor powder, aluminum end caps and glass. Mercury and particulate emissions from the system are captured by the air handling system comprised of a blower and cartridge filter (C01) and activated carbon adsorber (C02).

The Model 2000 Lamp Processor is also equipped with a compact fluorescent lamp (CFL) feed system. The feed system separates the glass, lamp component from the bases. In order to maintain the balance of the air flow into the lamp processor while maintaining the CFL feed system under negative pressure, the CFL feed system is equipped with its own air handling system that discharges directly into the feed belt of the lamp processor. The air handling system is comprised of a box filter for particulate control and a carbon filter to reduce the amount of mercury vapor transferred to the lamp processor. The pressure drop across the filter and the mercury level in the discharge are monitored. This monitoring data serves as the basis for determining when maintenance is required on the CFL air handling equipment. As a subsystem of P01, this equipment does not have maximum or minimum levels established.

Below and in Attachment B is a listing of the key operating parameters for the emission control devices for this process. The minimum and maximum levels reference permit limits. Grayed out cells are parameters for which there is no established limit. The low warning and high warning levels are established as action levels to be used by facility management to prevent an exceedance of the minimum or maximum level.

Sampling Point	Parameter	Sensor ID	Min	Low Warning	High Warning	Max	Expected	UOM
Pressure drop across the cartridge filter	Differential pressure	Magnehelic	0.4	1	4	6	2	in. wc
Pressure drop across carbon filter	Differential pressure	Magnehelic	1	4	8	12	6	in. wc
Pressure drop across CFL particulate filter	Differential pressure	Magnehelic	0.3	0.3	2	6	1	in. wc
Post CFL Carbon	Mercury Monitoring	Jerome or VM3000	0.000	0.020	0.025	0.050	0.01	mg/m3
Post Carbon	Mercury Monitoring	Jerome or VM3000	0.000	0.010	0.015	0.3671	0.001	mg/m3
C02 Carbon Adsorber	Temperature	Thermometer	Ambient	40	120		70	F

6.1.2 Process P08 – Model LSS1 Lamp Processor (Green)

The Model LSS1 Lamp Processor is a dry separation process that is used to separate the individual components of intact or crushed fluorescent lamps for reuse or recycling. The system is comprised of a feed belt, followed by a breaker and crusher for sizing. The sized pieces are then conveyed to rotary trommels where they are separated into mercury containing phosphor powder, aluminum end caps and glass. Mercury and particulate emissions from the system are captured by the air handling system comprised of a blower and cartridge collector with a HEPA filter (C04), which is generally referred to as the “HEPA filter system” and activated carbon adsorber (C05).

Below contains a listing of the key operating parameters for the emission control devices for this process. The minimum and maximum reference permit limits. Grayed out cells are parameters for which there is no established limit. The low warning and high warning levels are established as action levels to be used by facility management to prevent an exceedance of the minimum or maximum level.

Sampling Point	Parameter	Sensor ID	Min	Low Warning	High Warning	Max	Expected	UOM
Pressure drop across the HEPA filter system	Differential pressure	Magnehelic	0.4	1	4	6	2	in. wc
Pressure drop across carbon filter	Differential pressure	Magnehelic	1	4	8	12	6	in. wc

Sampling Point	Parameter	Sensor ID	Min	Low Warning	High Warning	Max	Expected	UOM
Post Carbon	Mercury Monitoring	Jerome or VM3000	0.000	0.010	0.015	0.4752	0.001	mg/m3
C05 Carbon Adsorber	Temperature	Thermometer	Ambient	40	120		70	F

6.2 Mercury Recovery Operations

As discussed in Section 2, a P&ID is provided in Figure 4-2 that serves to illustrate general configuration of the mercury recovery operations, including associated ventilation and air pollution control equipment, as well as associated parametric monitoring systems, which are also tabulated in Table 3. The overall system consists of three fundamental components: 1) furnace operations with burner management and temperature controls, 2) the vacuum or process side with condensers for mercury recovery and emissions control, and 3) the flue side heat exchangers and mercury emissions control. Under normal operating conditions, flue side emissions will not contain mercury. The retort room is also equipped with an evacuation and recirculation system to allow for control of potential releases of mercury to the indoor area.

In general, the recovery operations entail loading drums/kettles of mercury containing wastes into any of three retort ovens (P10, P11, P14). While loading the ovens and at the start of each batch the retort operator visually inspects the system for signs of damage or defect with respect to the items listed below. Inspections are recorded on the Retort Batch Worksheets (Attachment A), and if a defect is noted, then the defective part is repaired or replaced prior to the retort being placed into service:

- Each drum or kettle as it is loaded into the oven. This inspection is looking for any deformities or defects that could impact the ability of the container to hold a vacuum.
- Each drum or kettle containing fine particulate will have the face of the material covered with a glass wool fabric. The inspection evaluates the structural condition of the fabric.
- The vacuum piping connecting the drums or kettles to the vacuum header and condenser system, including articulating joints, connections and clamps, associated with each active retort vessel and drum prior to start-up of the oven. The inspection evaluates the structural integrity of the items.
- The piping connecting the drums or kettles to the vacuum sensors, including articulating joints, connections and clamps, associated with each active retort vessel and drum prior to start-up of the oven.
- The condenser system is visually inspected, and the temperature of the condensers will be verified to be within the range specified for the material in the process batch.

The drums/kettles are connected via vacuum lines to a condensing system that uses chilled water and glycol to condense the mercury vapor, which is collected in containers as the recovered product. Exhaust from the condensers containing mercury vapors that were not condensed proceed downstream to carbon adsorber C09 from the condenser/packed column for P10 and P11. Exhaust from the condensers containing mercury vapors that were not condensed proceed downstream to carbon adsorber C11 from the condenser for P14. Sections 6.2.1 through 6.2.3 provide detail regarding P10, P11, and P14, respectively, in addition to that which is summarized in Table 4.

The primary methods of determining whether the recovery process is operating properly are through monitoring the vacuum to each vessel (drums) within the oven and the temperature of the associated condenser system. If the vacuum to any drum is less than 0.05 inches Hg or the condenser system glycol or water temperature is above specifications, then the system will initiate the shutdown procedures contained in Section 7.3, which also includes the corrective action procedure that will be taken in the event of a malfunction or failure that results in the exceedance of an applicable emission limitation. Corrective action procedures that are specific to the adsorber

(C10) that serves the Retort Room and exhausts from C09 and C11 are presented in Section 7.4. Following an event requiring corrective action, the system will be inspected to determine the reason for the emergency shutdown. The cause of the shutdown will be corrected prior to restarting the system

6.2.1 Process P10 – Rip/Sys Oven Retort

RipSys Oven Retort system (f/k/a R3) is used for the recovery of elemental mercury from wastes and equipment containing recoverable levels of mercury. The system is comprised of a natural gas fired oven which is used to heat up to four drums of material. The drums are connected via vacuum lines to a scrubber reservoir/packed column condensing system that uses chilled water to condense the mercury vapor. A sulfur-impregnated carbon adsorber (C09) collects the mercury vapor not collected by the condensing system. The air emissions then discharge through the process stack (S11) to the retort room stack (S14) via a sulfur-impregnated carbon adsorber (C10). The natural gas combustion by-products from P10 discharge through flue stack (S12) via a heat exchanger (C12) in series with a carbon adsorption unit (C15). The u-pass air from the heat exchanger discharges out stack S18.

Below is a listing of the key operating parameters for the emission control devices for this process. The minimum and maximum reference permit limits or are critical operating parameters. Grayed out cells are parameters for which there is no established limit. The low warning and high warning levels are established as action levels to be used by facility management to prevent an exceedance of the minimum or maximum level or to achieve internally established goals. Limits specified as TBD are scheduled to be established during testing of the systems prior to start-up.

Sampling Point	Parameter	ID	Min	Low Warning	High Warning	Max	Expected	UOM
At I/O Control Panel	Ambient Temperature	RTD612	Ambient		Alarm internal - AC Turn On		Ambient	F
Oven Temperature	Temperature	T/C2412	Ambient			900		F
S12 I-pass Blower	Hertz (correlated to CFM)	VFD226	TBD	TBD	TBD	TBD	TBD	
S18 U-pass Blower	Hertz (correlated to CFM)	VFD214	TBD	TBD	TBD	TBD	TBD	

Stack Controls	Parameter	ID	Min	Low Warning	High Warning	Max	Expected	UOM
C12 Heat Exchanger - before	Temperature	T/C2414	Ambient			900		F
Stack S12 prior to C12	Oven/Stack pressure	PIT2132	0.5	1	10	40		in wc
C12 Heat Exchanger	Differential Pressure	PDT512	0.5	0.75	1.25	2.5	0.82	in wc
C12 Heat Exchanger - after	Temperature	RTD712	ambient	32	160	180		F
C15 Carbon pre-filter	Temperature	RTD706	40	40	120	140	70	F

Stack Controls	Parameter	ID	Min	Low Warning	High Warning	Max	Expected	UOM
C15 Carbon pre-filter	Differential Pressure (pre-filter)	PDT513	0.1	0.2	0.75	2	0.25	in wc
C15 Carbon	Humidity	DV516						
C15 Carbon	Fresh air damper	DV843						% open
C15 Carbon	Differential Temperature	RTD731	N/A	N/A	10	15		F
C15 Carbon	Differential Pressure (@100 cfm)	PDT514	0.4	1	4	6	2	in wc
C15 Carbon	Differential Pressure (@500 cfm)	PDT514	1	2	8	10	5	in wc
C15 Carbon	Differential Pressure (@1000 cfm)	PDT514	8	10	18	22	15	in wc
C12 Exchanger U-pass pre-filter	Differential Pressure	PDT515	0.1	0.15	0.5	2	0.25	in wc
S12 Post Carbon (C15)	Mercury Monitoring	Jerome or VM3000	N/A	N/A	0.01	0.02	<0.005	mg/m3

Oven Controls	Parameter	Sensor ID	Min	Low Warning	High Warning	Max	Expected	UOM
Vac 1	Vacuum in Drum 1	PIT2134	0.05	0.25	4	6	2	in Hg
Vac 2	Vacuum in Drum 2	PIT2136	0.05	0.25	4	6	2	in Hg
Vac 3	Vacuum in Drum 3	PIT2138	0.05	0.25	4	6	2	in Hg
Vac 4	Vacuum in Drum 4	PIT2140	0.05	0.25	4	6	2	in Hg
Vac 5	Vacuum in Header line	PIT2203	0.05	0.25	6	8	4	in Hg
Cond 1	Temperature (Condenser Ejector)	T/C2435	30	35	60	80	40	F
C09 Carbon	Differential Pressure (same sensor for S13)	PIT2207	0.5	1	4	6	1.5	in wc
C09 Carbon	Temperature	Thermometer		40	120		70	F

6.2.2 Process P11 – Magna Oven Retort

Magna Oven Retort natural gas fired oven (f/k/a R4) a scrubber reservoir/packed column condensing system using chilled water to condense the mercury vapor. Sulfur-impregnated carbon adsorber (C09) collects the mercury vapor not trapped by the condensing system. The air emissions then discharge through the process stack (S11) to the retort room stack (S14) equipped with sulfur-impregnated carbon adsorber (C10). The natural gas combustion by-products from P11 discharge through flue stack (S13) via a heat exchanger (C13) in series with a carbon adsorption unit (C15). The u-pass air from the heat exchanger discharges out stack S19.

Below is a listing of the key operating parameters for the emission control devices for this process. The minimum and maximum reference permit limits or are critical operating parameters. Grayed out cells are parameters for which there is no established limit. The low warning and high warning levels are established as action levels to be used by facility management to prevent an exceedance of the minimum or maximum level or to achieve internally established goals. Limits specified as TBD are scheduled to be established during testing of the systems prior to start-up.

Sampling Point	Parameter	Sensor ID	Min	Low Warning	High Warning	Max	Expected	UOM
At I/O Control Panel	Ambient Temperature	RTD612	Ambient		Alarm internal - AC Turn On		Ambient	F
Oven Temperature	Temperature	T/C2408	ambient			900		F
S13 I-pass Blower	Hertz (correlated to CFM)	VFD202	TBD	TBD	TBD	TBD	TBD	
S13 U-pass Blower	Hertz (correlated to CFM)	VFD139	TBD	TBD	TBD	TBD	TBD	

Stack Controls	Parameter	Sensor ID	Min	Low Warning	High Warning	Max	Expected	UOM
C13 Heat Exchanger – before	Temperature	T/C2410	ambient			900		F
Stack S13 prior to C13	Oven/Stack pressure	PIT2109	0.5	1	10	40		in wc
C13 Heat Exchanger	Differential Pressure (I-pass)	PDT501	0.5	0.75	1.25	2.5	0.82	in wc
C13 Heat Exchanger – after	Temperature	RTD702	ambient	32	160	180	70	F
C16 Carbon pre-filter	Temperature	RTD616	40	40	120	140	70	F
C16 Carbon pre-filter	Differential Pressure (pre-filter)	PDT502	0.1	0.2	0.75	2	0.25	in wc
C16 Carbon	Humidity	DV505						
C16 Carbon	Fresh air damper	DV838						% open
C16 Carbon	Differential Temperature	RTD737	N/A	N/A	10	15	5	F

Stack Controls	Parameter	Sensor ID	Min	Low Warning	High Warning	Max	Expected	UOM
C16 Carbon	Differential Pressure (@100 cfm)	PDT503	0.4	1	4	6	2	in wc
C16 Carbon	Differential Pressure (@500 cfm)	PDT503	1	2	8	10	5	in wc
C16 Carbon	Differential Pressure (@1000 cfm)	PDT503	8	10	18	22	15	in wc
C13 Exchanger U-pass pre-filter	Differential Pressure (U-Pass pre-filter)	PDT504	0.1	0.15	0.5	2	0.25	in wc
S13 Post Carbon (C16)	Mercury Monitoring	Jerome or VM3000	N/A	N/A	0.01	0.02	<0.001	mg/m3

Oven Controls	Parameter	Sensor ID	Min	Low Warning	High Warning	Max	Expected	UOM
Vac 1	Vacuum in Drum 1	PIT2111	0.05	0.25	4	6	2	in Hg
Vac 1	Vacuum in Kettle 1	PIT2111	0.05	0.5	8	12	5	in Hg
Vac 2	Vacuum in Drum 2	PIT2113	0.05	0.25	4	6	2	in Hg
Vac 3	Vacuum in Drum 3	PIT2115	0.05	0.25	4	6	2	in Hg
Vac 4	Vacuum in Drum 4	PIT2117	0.05	0.25	4	6	2	in Hg
Vac 5	Vacuum in Drum 5	PIT2126	0.05	0.25	4	6	2	in Hg
Vac 6	Vacuum in Drum 6	PIT2128	0.05	0.25	4	6	2	in Hg
Vac 7	Vacuum in Header line	PIT2130	0.05	0.25	4	12	5	in Hg
Cond 1	Temperature (Condenser Ejector)	T/C2433	30	35	50	80	40	F
C09 Carbon	Differential Pressure (same sensor for S12)	PIT2207	0.5	1	4	6	1.5	in wc
C09 Carbon	Temperature	Thermometer		40	120		70	F

6.2.3 Process P14 – Wisconsin Oven Retort

Wisconsin Oven Corporation (WOC) Natural Gas Fired Oven, a Model Batch-8/8/6-12G is connected to three in-series condensers chilled with propylene glycol to condense the mercury vapor. Sulfur-impregnated carbon adsorber (C11) collects the mercury vapor not trapped by the condensing system. The air emissions then discharge through the process stack (S15) to the retort room stack (S14) equipped with sulfur-impregnated carbon adsorber (C10). The natural gas combustion by-products from P14 discharge through flue stack (S17) via a heat exchanger (C14) in series with two parallel carbon adsorbent units (C17A and C17B). The u-pass air from the heat exchanger discharges out stack S20.

This system was designed for the recovery of mercury from devices, debris and bulky wastes. These wastes are loaded into vacuum vessels (kettles) and four kettles are loaded into the oven and connected two each to two separate vacuum header lines. Alternatively, this process may also be loaded with nine drums of material similar to that processed in the Rip/Sys Oven. When loaded with drums the drums are connected three each to three separate vacuum headers. In both cases the vacuum headers are tied into a single vacuum line that transports the vapors to the condensers. Within the condensers the vapors are condensed and elemental mercury is recovered from the process.

Below is a listing of the key operating parameters for the emission control devices for this process. The minimum and maximum reference permit limits or are critical operating parameters. Grayed out cells are parameters for which there is no established limit. The low warning and high warning levels are established as action levels to be used by facility management to prevent an exceedance of the minimum or maximum level or to achieve internally established goals. Limits specified as TBD are scheduled to be established during testing of the systems prior to start-up.

Sampling Point	Parameter	ID	Min	Low Warning	High Warning	Max	Expected	UOM
At I/O Control Panel	Ambient Temperature	RTD612	Ambient		Alarm internal - AC Turn On		Ambient	F
Oven Temperature		T/C2404	ambient		1175	1175	oven set point	F
C14 I-pass Blower	Hertz (correlated to CFM)	VFD126	TBD	TBD	TBD	TBD	TBD	
C14 U-Pass Blower	Hertz (correlated to CFM)	VFD105	TBD	TBD	TBD	TBD	TBD	

Stack Controls	Parameter	ID	Min	Low Warning	High Warning	Max	Expected	UOM
C14 Heat Exchanger - before	Temperature	T/C2406	ambient		1175	1175	<oven set point	
Stack S17 prior to C14	Stack vacuum/ negative pressure	PIT2026	0.2	0.5	10	40	3	in wc
C14 Heat Exchanger	Differential Pressure	PT436	0.5	0.75	1.5	2	0.82	in wc
C14 Heat Exchanger - after	Temperature	RTD606	ambient	32	160	180	70	F

Stack Controls	Parameter	ID	Min	Low Warning	High Warning	Max	Expected	UOM
C17 Carbon pre-filter	Temperature	RTD602	ambient	40	120	140	70	F
C17 Carbon pre-filter	Differential Pressure (pre-filter)	PDT437	0.1	0.15	0.75	2	0.25	in wc
C17 Carbon	Fresh air damper setting	DV836						% open
C17 Carbon	Humidity	DV441						
C17 Carbon-1	Differential Temperature (Carbon 1)	RTD716	N/A	N/A	10	15	5	F
C17 Carbon-2	Differential Temperature (Carbon 2)	RTD727	N/A	N/A	10	15	5	F
C17Carbon-1	Differential Pressure (Carbon 1 @ 500 cfm)	PDT438	1	2	4	5	3	in wc
C17 Carbon-1	Differential Pressure (Carbon 1 @ 1250 cfm)	PDT438	3	6	12	15	8	in wc
C17 Carbon-1	Differential Pressure (Carbon 1 @ 2000 cfm)	PDT438	10	12	24	28	20	in wc
C17 Carbon-2	Differential Pressure (Carbon 2 @ 500 cfm)	PDT439	1	2	4	5	3	in wc
C17 Carbon-2	Differential Pressure (Carbon 2 @ 1250 cfm)	PDT439	3	6	12	15	8	in wc
C17 Carbon-2	Differential Pressure (Carbon 2 @ 2000 cfm)	PDT439	10	12	24	28	20	in wc
C14 Exchanger U-pass pre-filter	Differential Pressure	PDT440	0.1	0.15	0.5	2	0.25	in wc
S17 Post Carbon (C17)	Mercury Monitoring	Jerome or VM3000	N/A	N/A	0.01	0.02	<0.005	mg/m3

Oven Controls	Parameter	ID	Min	Low Warning	High Warning	Max	Expected	UOM
Vac 1	Vacuum in Drum 1	PIT2028	0.05	0.25	4	6	2	in Hg
	Vacuum in Kettle 1		0.05	0.5	8	12	5	in Hg
Vac 2	Vacuum in Drum 2	PIT2030	0.05	0.25	4	6	2	in Hg
Vac 3	Vacuum in Drum 3	PIT2032	0.05	0.25	4	6	2	in Hg

Oven Controls	Parameter	ID	Min	Low Warning	High Warning	Max	Expected	UOM
	Vacuum in Kettle 2		0.05	0.5	8	12	5	in Hg
Vac 4	Vacuum in Drum 4	PIT2034	0.05	0.25	4	6	2	in Hg
Vac 5	Vacuum in Drum 5	PIT2036	0.05	0.25	4	6	2	in Hg
Vac 6	Vacuum in Drum 6	PIT2038	0.05	0.25	4	6	2	in Hg
Vac 7	Vacuum in Drum 7	PIT2040	0.05	0.25	4	6	2	in Hg
	Vacuum in Kettle 3		0.05	0.5	8	12	5	in Hg
Vac 8	Vacuum in Drum 8	PIT2103	0.05	0.25	4	6	2	in Hg
Vac 9	Vacuum in Drum 9	PIT2105	0.05	0.25	4	6	2	in Hg
	Vacuum in Kettle 4		0.05	0.5	8	12	5	in Hg
Vac 10	Vacuum in Header line	PIT2107	0.05	0.25	4	12	5	in Hg
Post Condenser 1	Temperature	T/C2429	-20	-10	100	120	80	F
Post Condenser 3	Temperature	T/C2431	-20	-10	60	80	40	F
C11 Carbon	Differential Pressure	PIT2205	0.5	1	4	6	1.5	in wc
C11 Carbon	Temperature	Thermometer	Ambient	40	120		70	F

7.0 EMERGENCY OPERATIONS:

This section establishes corrective action procedures that will be taken in the event of a malfunction or failure that results in the exceedance of an applicable emission limitation. Specific procedures are provided for the lamp recycling operations and mercury recovery (retort) operations in Sections 7.2. and 7.3, respectively. Section 7.4 includes a targeted procedure that is specific to the adsorber C10 for stack S14, which controls exhaust from C09, C11, and the Retort Room. A general procedure for other operations not otherwise detailed in the latter sections is presented in Section 7.1.

7.1 General Corrective Action Procedure

When a malfunction or failure is observed for which a specific procedure is not otherwise presented in Sections 7.2 through 7.4, the actions outlined below will be taken to alert the agency.

1. Verification of the Value of the Operating Parameter: If a monitored parameter is determined to be outside the specified ranges, the operator should take a new reading to ensure the validity of the reading.
2. Initial Correction Attempt: After verifying that the monitored parameter is outside the operating range, the operator shall contact the *Operations Manager*, or his/her designee, to identify and make process adjustment(s), as necessary to return the parameter to within the required operating range.
3. Response to Unsuccessful Correction Attempts: If the *Operations Manager*, or his/her designee, determines, through trial and error that the operating parameter cannot be returned to the stated range, then the operator should make a complete assessment of the situation and notify the *Facility Emergency Coordinator*.

4. Secondary Correction Attempt: After notification of the situation, the *Facility Emergency Coordinator* should take the following actions:
 - Assist the *Operations Manager*, or his/her designee, in determining the cause of the malfunction.
 - Solicit the resources necessary to verify that the readings are valid and not attributable to instrument error.
 - Assist the *Operations Manager*, or his/her designee, in making the necessary process adjustments.
 - Solicit the resources necessary to make the required repairs.
 - If the above efforts are unsuccessful at returning the operating parameter to the acceptable operating range, solicit resources that are determined to be necessary to solve the problem.
5. The *Operations Manager* will direct repairs and inspection of the malfunctioning unit to determine the extent of damage and estimate the amount of time required to repair the unit.
6. The *Operations Manager* will determine the amount of time to reasonably and safely shut down the affected plant operations.
7. The *Operations Manager* will report the following information to the *Facility Emergency Coordinator*: the cause of the malfunction and the duration of the exceedance, along with the time the malfunction started and when repairs are expected to be completed.
8. The *Facility Emergency Coordinator* or his/her designee will assess the event and will contact the WDNR:
 - a. Immediately call the WDNR at **1-800-943-0003** in the event of any *hazardous substance*³ *air spill* - in general, such an event includes any emission of a hazardous substance that does not conform with an applicable air permit condition or is otherwise allowed by the WDNR under chapters NR 400 to 499. Notice shall be given as required by s. 292.11, Wis. Stats., and ch. NR 706, Wis. Adm. Code.
 - b. Call the WDNR Bureau of Air Management contact (see Table 2) by the next business day following a malfunction or other unscheduled event that causes or may cause any emission limitation to be exceeded, or a deviation from any other condition specified in its current NR 407 operating permit. When notifying the WDNR of such an event, inform such person that:
 - a malfunction has occurred;
 - which unit is malfunctioning;
 - the cause of the malfunction and duration of the exceedance;
 - what time the malfunction started or was discovered; and
 - when repairs are expected to be completed and the measure(s) that will be taken to minimize emissions during that period.
9. Following safe shut-down of the affected equipment, the *Supervisor* will proceed with the required corrective actions as directed by the *Facility Emergency Coordinator*.

The *Facility Emergency Coordinator*, or his/her designee, will document the malfunction occurrence and send copies of such documentation to the appropriate WDNR personnel.

7.2 Lamp Recyclers

Referring to Attachment C, a detailed failure analysis was conducted for all air pollution control equipment and the sensors and monitoring equipment associated with verifying the proper operation of the lamp recycling equipment. That analysis and the procedures developed during the analysis serve as the basis for the below described emergency procedures.

³ See footnote 1 on page 1 for the definition of a *hazardous substance*.

7.2.1 Emergency Shutdown – Mechanical Malfunction

Conditions that constitute a mechanical malfunction requiring emergency shutdown for this equipment include but are not limited to the following.

- Abnormal process operation, mechanical failure of a component part of the process.
- Foreign object inserted into machine.
- Unusual sounds from the equipment.
- Personnel performing unsafe activities on or around the equipment.

Mechanical Emergency Shut-down Procedures

- Locate the nearest E-Stop, (Emergency Stop Switch), and depress switch until the unit shuts down.
- Verify that the blower, Torit canister filters for P01 Model 2000 (Blue Machine) or the HEPA filter system for P08 Model LSSI Lamp Recycler (Green Machine) and activated carbon systems are operating properly and that stack levels are within permit conditions.
- Contact the supervisor to inform them of the equipment's condition.

7.2.2 Emergency Shutdown – Air Emission Exceedance

Conditions that constitute an air permit event requiring emergency shutdown for this process include the following.

- A deviation of the pressure drop on the particulate filter or carbon adsorber from the normal operating range.
- An exceedance of the permit limit of:
 - P01 Model 2000 Lamp Recycler (Blue): 0.3671 mg/m³ mercury in the exhaust stack.
 - P08 Model LSSI Lamp Recycler (Green): 0.4752 mg/m³ mercury in the exhaust stack.
- Emission of shade or density exceeding the number 1 on the Ringlemann chart or 20% opacity from stacks S01 or S08.

Air Emission Emergency Shut-down Procedures

- At the control panel, for the individual lamp machine, turn the main power switch to the "Off" position.
- At the power disconnect box for the blower, move the switch to the "Off" position and tag the equipment as out of service.
- Verify that the blower is off and all magnehelic gauges are at zero confirming that there is no flow through the system or out the stack.
- Contact the supervisor to inform them of the equipment's condition.
- Notify WDNR in accordance with Air Permit Requirements and release reporting requirements as outlined in the facility contingency plan.

7.2.3 Startup After Emergency Shutdown

- After the malfunction has been rectified reset any e-stop switches as necessary. Ensure all lock out / tag out procedures have been followed if required.
- Start the blower to the unit, if necessary.
- Verify the concentration of mercury in the stack emissions and verify the pressure drop across the carbon and across the particulate filter. Record these results on an Air Monitoring Log form or on the maintenance work order.
- Inspect the exhaust emissions from stack S01 or S08 for shade.
- Start the lamp machine in the automatic mode.
- Inspect the process equipment for normal operation.
- Begin processing operations and reverify that pressure drops and mercury concentrations remain within permit limits and record those results on the air monitoring log or on the maintenance work order.

7.3 Retort Operations

Again referring to Attachment C, a detailed failure analysis was conducted for all air pollution control equipment and the sensors and monitoring equipment associated with verifying the proper operation of the retort ovens P10 – Rip/Sys Oven, P11 – Magna Oven, and P14 Wisconsin Oven equipment. Through this analysis Veolia developed a series of response activities based on the nature of the condition initiating the response. Since conditions may change midway through a response activity, a hierarchy of responses has been established. Below is a listing of those response actions with the highest priority action listed first.

1. Emergency Shutdown / E-stop Activation
2. Power Failure Shutdown
3. Flue stack Pressure Shutdown
4. Emission Temperature Shutdown
5. Drum Vacuum Shutdown
6. Emergency Oven Shutdown

7.3.1 Emergency Shutdown / E-stop Activation – Elevated Mercury Levels

This shutdown procedure will be implemented if mercury concentrations in excess of the maximum, as specified in Attachment C, are detected in the discharge to the flume gas stacks S12, S13 or S17. There is an E-stop located on the outside I/O panel which can be activated by depressing the E-stop button. An E-stop may also be initiated by the retort operator at the control panel located outside of the retort room.

Emergency Shutdown Procedures

- PLC initiated activities performed immediately upon activation of the e-stop or system shutdown by the operator.
 - Automated shutdown of gas burner to oven.
 - Oven exhaust damper closed.
 - Oven intake damper closed.
 - I-pass blower shutdown.
 - U-pass blower shutdown.
 - Fresh air dampers closed.
- PLC will maintain the below systems operating in accordance within the normal operating ranges.
 - Recirculation fans within oven to allow for even cooling and to prevent damage to the oven.
 - Vacuum pump connected to the drums in the oven
 - Chiller for condensers cooling the vapor stream drawn by the vacuum pump.
 - Discflo cooling water pump circulating cooling water.
- Operator Activities
 - Cease all activities within the retort room and ensure the safety of all personnel.
 - Monitor the mercury levels in Stacks S12, S13, S14 and S17 as soon as it can safely be completed.
 - Continue to monitor stacks S12, S13, S14 and S17. Adjust flows on other stacks and systems to maintain negative pressure within retort room.
- Operator Activities after oven has cooled to <200° F.
 - Access the oven, remove and secure the containers. Relabel the containers and return them to storage.

7.3.2 Power Failure Shutdown

This shutdown procedure will be implemented if there is a loss of power to the facility. The PLC is equipped with an uninterruptible power supply that will allow the PLC to maintain control of the operating systems of the retort oven. Once power from the emergency generator is supplied to blowers and control devices the system will return to their normal operating parameters. Additionally, the vacuum pump and chillers are configured to resume operation when power is returned.

If any component fails to restart following the return to power, an out of limits condition will develop and the PLC will initiate shutdown in accordance with the procedures for that sensor.

Although the PLC will maintain the operation of the systems, the operator will be required to verify operating conditions following a loss of power, including the below listed activities.

- Operator Activities
 - Verify all parameters on the PLC are within the normal operating parameters (noted by a green indicator on the control panel). If not within normal range activate e-stop.
 - Record on the batch worksheet that a loss of power occurred and the time when it was verified that all operating parameters remained within normal ranges or note any deviations.

7.3.3 Flue Stack Pressure Shutdown

This shutdown procedure will be implemented if there is a loss of negative pressure within the flue stacks S12, S13 or S17, which could result in the leakage of vapors from the flue stack to the atmosphere.

Emergency Shutdown Procedures

- PLC initiated activities performed immediately upon detection of a positive pressure condition within the flue stack or other condition that could result in a positive pressure within the control systems.
 - Automated shutdown of gas burner to oven.
 - Oven exhaust damper closed.
 - Oven exhaust blower shutdown.
 - Oven intake damper closed.
 - I-pass blower reduced to idle speed.
 - If PLC detects a problem with the I-pass blower shutdown the I-pass blower.
 - Fresh air dampers closed.
- PLC will maintain the below systems operating in accordance within the normal operating ranges.
 - U-pass blower to maintain temperature at particulate filter.
 - Recirculation fans within oven to allow for even cooling and to prevent damage to the oven.
 - Vacuum pump connected to the drums in the oven
 - Chiller for condensers cooling the vapor stream drawn by the vacuum pump.
 - Discflo cooling water pump circulating cooling water.
- Operator Activities
 - Cease all activities within the retort room and ensure the safety of all personnel.
 - Verify that Honeywell burner controller is reading "0".
 - Verify that all other systems are shutdown or functioning as described above.
 - Monitor and record the mercury levels in Stacks S12, S13, S14 and S17 as soon as it can safely be completed.
 - Continue to monitor and record the mercury concentration in stacks S12, S13, S14 and S17. Adjust flows on other stacks and systems to maintain negative pressure within retort room.
 - If mercury levels exceed an action level within any stack activate e-stop located on outside control panel.
 - If mercury levels exceed an air permit limit, activate E-stop and initiate implementation of the contingency plan.
- Operator Activities after oven has cooled to <200° F.
 - Shutdown vacuum pump, chiller and discflo pump
 - Access the oven, remove and secure the containers. Relabel the containers and return them to storage.

7.3.4 Emission Temperature Shutdown

This shutdown procedure will be implemented if temperatures within the flue stack S12, S13 or S17 control system exceed a maximum operating limit. These procedures are configured to protect the emission control equipment and prevent a fire within the system.

Emergency Shutdown Procedures

- PLC initiated activities performed immediately upon activation of the e-stop or system shutdown by the operator.
 - Automated shutdown of gas burner to oven.

- Oven exhaust damper closed.
- Oven intake damper closed.
- I-pass blower to idle speed.
- Fresh air dampers closed.
- PLC will maintain the below systems operating in accordance within the normal operating ranges.
 - Recirculation fans within oven to allow for even cooling and to prevent damage to the oven.
 - U-pass blower at maximum flow to cool I-pass temperature.
 - Vacuum pump connected to the drums in the oven
 - Chiller for condensers cooling the vapor stream drawn by the vacuum pump.
 - Discflo cooling water pump circulating cooling water.
- Operator Activities
 - Cease all activities within the retort room and ensure the safety of all personnel.
 - Monitor the mercury levels in Stacks S12, S13, S14 and S17 as soon as it can safely be completed.
 - Continue to monitor stacks S12, S13, S14 and S17. Adjust flows on other stacks and systems to maintain negative pressure within retort room.
 - If mercury levels exceed an action level within any stack activate e-stop located on outside control panel.
 - If mercury levels exceed an air permit limit, initiate implementation of the contingency plan.
- Operator Activities after oven has cooled to <200° F.
 - Access the oven, remove and secure the containers. Relabel the containers and return them to storage.

7.3.5 Drum or Kettle Vacuum Shutdown

This shutdown procedure will be implemented if there is a loss of vacuum on any drum or kettle within the P10 – Rip/Sys, P11 – Magna, or P14 Wisconsin ovens which could result in the leakage of vapors from the interior of the oven and to the flue stack. The goal of this shutdown procedure is to cool the contents of the oven as rapidly as it can safely be completed minimizing the release of mercury to the interior space of the oven. This will reduce the potential for saturation of the activated carbon in control C15, C16 or C17.

Emergency Shutdown Procedures

- PLC initiated activities performed immediately upon detection of a positive pressure condition within a drum or a loss of vacuum on the header line.
 - Automated shutdown of gas burner to oven.
- PLC will maintain the below systems operating in accordance within the normal operating ranges until oven has reached a temperature of <200° F.
 - Oven exhaust damper open.
 - Oven exhaust blower operating.
 - Oven intake damper open.
 - I-pass blower operating at ≥500 cfm for S12 and S13
 - I-pass blower operating at ≥ 2,500 cfm for S17..
 - U-pass blower to maintain temperature at particulate filter.
 - Recirculation fans within oven to allow for even cooling and to prevent damage to the oven.
 - Vacuum pump connected to the drums in the oven
 - Chiller for condensers cooling the vapor stream drawn by the vacuum pump.
 - Discflo cooling water pump circulating cooling water.
- Operator Activities
 - Cease all activities within the retort room and ensure the safety of all personnel.
 - Verify that Honeywell burner controller is reading “0”.
 - Verify that all other systems are functioning as described above.
 - Monitor and record the mercury levels in Stacks S12, S13, S14 and S17 as soon as it can safely be completed.
 - Continue to monitor and record the mercury concentration in stacks S12, S13, S14 and S17. Adjust flows on other stacks and systems to maintain negative pressure within retort room.
 - If mercury levels exceed an action level within any stack activate e-stop located on outside control panel.

- If mercury levels exceed an air permit limit, initiate implementation of the contingency plan.
- PLC Activities after oven has cooled to <200° F.
 - Oven exhaust damper closed.
 - Oven exhaust blower shutdown.
 - Oven intake damper closed.
 - I-pass blower to idle speed.
- Operator Activities after oven has cooled to <200° F.
 - Shutdown vacuum pump, chiller and discflo pump
 - Access the oven and photograph the interior of the oven.
 - Remove and secure the containers. Relabel the containers and return them to storage.
 - Remove and secure piping for inspection. Inventory each piece used in the batch.

7.3.6 Emergency Oven Shutdown

This shutdown procedure will be implemented when operating parameter has exceeded an upper or lower limit but the differential pressures are within limits and the flue stack is maintained under negative pressure. The goal of this shutdown procedure is to cool the contents of the oven as rapidly as it can safely be completed.

Emergency Shutdown Procedures

- PLC initiated activities performed immediately upon detection of a positive pressure condition within a drum or a loss of vacuum on the header line.
 - Automated shutdown of gas burner to oven.
- PLC will maintain the below systems operating in accordance within the normal operating ranges until oven has reached a temperature of <200° F.
 - Oven exhaust damper open.
 - Oven exhaust blower operating.
 - Oven intake damper open.
 - I-pass blower operating at ≥500 cfm for S12 and S13.
 - I-pass blower operating at ≥2,500 cfm for S17.
 - U-pass blower to maintain temperature at particulate filter.
 - Recirculation fans within oven to allow for even cooling and to prevent damage to the oven.
 - Vacuum pump connected to the drums in the oven
 - Chiller for condensers cooling the vapor stream drawn by the vacuum pump.
 - Discflo cooling water pump circulating cooling water.
- Operator Activities
 - Cease all activities within the retort room and ensure the safety of all personnel.
 - Verify that Honeywell burner controller is reading "0".
 - Verify that all other systems are functioning as described above.
 - Monitor and record the mercury levels in Stacks S12, S13, S14 and S17 as soon as it can safely be completed.
 - Continue to monitor and record the mercury concentration in stacks S12, S13, S14 and S17. Adjust flows on other stacks and systems to maintain negative pressure within retort room.
 - If mercury levels exceed an action level within any stack activate e-stop located on outside control panel.
 - If mercury levels exceed an air permit limit, initiate implementation of the contingency plan.
- PLC Activities after oven has cooled to <200° F.
 - Oven exhaust damper closed.
 - Oven exhaust blower shutdown.
 - Oven intake damper closed.
 - I-pass blower to idle speed.
- Operator Activities after oven has cooled to <200° F.
 - Shutdown vacuum pump, chiller and discflo pump
 - Access the oven, remove and secure the containers. Relabel the containers and return them to storage.

7.3.7 Startup After Emergency Shutdown

Following the initiation of an emergency shutdown procedure, as outlined above, a review of the cause will be completed. This review will include a review of specific piece of equipment prompting the shutdown as well as any contributing factors. Based on the results of the review the following steps will be implemented to bring the system back on-line.

- Replace filter media as necessary.
- Replace sensors as necessary.
- Test each component replaced to verify it is operating properly and replace as necessary.
- Test the flue stack emission control system verifying that pressures within the system are balanced and controls are operating properly.
- Verify the temperature probes are operating properly.
- Complete all maintenance work orders documenting repairs completed.
- Monitor mercury concentration within the stack to verify it is within limits.
- Return to the process to operation.
- If the shutdown involved an implementation of the contingency plan, notify the department of the intent to bring the system back on-line.

7.4 Control Device C10 Carbon / Stack S14

A detailed failure analysis was conducted for all air pollution control equipment and the sensors and monitoring equipment associated with verifying the proper operation of the equipment. Through this analysis Veolia developed a series of response activities based on the nature of the condition initiating the response.

7.4.1 Emergency Shutdown – Low Flow Condition

Conditions of low flow will typically be indicated by either a lower than normal pressure drop across the filter if there is a mechanical problem or a higher than normal pressure drop if there is an obstruction or fouling of the filters. The following steps will be implemented in the event of a low flow condition causing the exceedance of a maximum or minimum pressure drop.

- Cease material handling / retort prep activities in retort room excluding response activities
- Assess status of ovens. If capacity exists, use oven emission controls to provide negative pressure to the retort room.
- Assess reason for low flow and make necessary repairs.

7.4.2 Emergency Shutdown – Elevated Mercury Levels

Elevated mercury levels can be caused by several conditions including elevated concentrations within the retort room, settling of carbon causing the bypass of the carbon bed by a portion of the exhaust stream or channeling of exhaust flow due to a low flow condition.

- Close the damper to S14, open the damper to the room and recirculate the air.
- Check mercury concentrations in stacks S12, S13, S17. If any of these stacks exceeds an emergency shutdown level activate the e-stop.
- Cease material handling / retort prep activities in the retort room excluding response activities.
- If mercury levels exceed an air permit limit, initiate implementation of the contingency plan.
- Assess the reason for the elevated levels.
- Continue to monitor mercury levels in the discharge from C10.

7.4.3 Startup After Emergency Shutdown

- Verify that all required repairs have been completed and remove lock-out devices.
- Re-energize the blower motor by moving the switch on the power disconnect box to the “On” position.
- Check equipment for proper operation and verify that mercury concentrations with the stack are within permit limits.
- If mercury concentration is within limits, reopen damper to stack S14 and close the damper to the room.
- If mercury concentration is outside the limits, reassess possible causes and initiate repairs.

Table 1. Summary of Covered Processes & Associated Controls and Stacks

Stacks			
Number	Description	Associated Processes	Associated Control Devices
S01	Stack for Model 2000 Lamp Processor (blue lamp line)	P01	C01 and C02
S08	Stack for Model LSS1 Lamp Processor (green lamp line)	P08	C04 and C05
S12	Flue Stack for Rip/Sys Oven Retort	P10	C12, C15
S13	Flue Stack for Magna Oven Retort	P11	C13, C16
S14	Stack for Retort Room (consolidated discharge for Stacks S11, S15 and F99 fugitive)	P10, P11, P14	C10
S16	Stack for Generac Emergency Generator	P13	N/A
S17	Flue Stack for Wisconsin Oven Retort	P14	C14, C17
Processes			
Number	Description	Associated Control Devices	Associated Stack
P01	Model 2000 Lamp Processor (Blue) including CFL feed system	C01 and C02	S01
P08	Model LSS1 Lamp Processor (Green)	C04 and C05	S08
P10	Rip/Sys Oven Retort	C09 via condenser/packed col.	S14, S12
P11	Magna Oven Retort	C09 via condenser/packed col.	S14, S13
P13	Generac Emergency Generator	N/A	S16
P14	Wisconsin Oven Retort	C11 via condensers	S14, S17
Air Pollution Control Equipment & Associated Devices			
Number	Description	Associated Process	Associated Stack
C01	Torit Canister Filter	P01	S01
C02	Activated Carbon Adsorber	P01	S01
C04	Torit TD w/HEPA Filter	P08	S08
C05	Activated Carbon Adsorber	P08	S08
C09	Activated Carbon Adsorber	P10 and P11	S14 via C10
C10	Activated Carbon Adsorber	P10, P11, P14 and Retort Room	S14
C11	Activated Carbon Adsorber	P14	S14 via C10
C12	Air to Air Heat Exchanger	P10	S12 via C15
C13	Air to Air Heat Exchanger	P11	S13 via C16
C14	Air to Air Heat Exchanger	P14	S17 via C17
C15	Activated Carbon Adsorber	P10	S12
C16	Activated Carbon Adsorber	P11	S13
C17	Activated Carbon Adsorber	P14	S17
Other Equipment			
Number	Description	Associated Process or Control Devices	
300A500	Retort Vacuum Pump and associated piping	P10, P11 and P14 C09 and C11	
300A400	30 Ton Chiller	P14	
200A401	26 Ton Chiller	P10 and P11	
200A011, 200A017, 200A021, 200A027 300A031, 300A038	I-pass and U-pass blowers	S12, S13, S17	
200A300	Packed Column Condenser System	P10 and P11	
300A155	Wisconsin Oven Condenser System	P14	

Table 2. List of Responsible Personnel

Name	Title	Responsibilities	In-Plant Radio/ Pager (Y/N)	Telephone Numbers	
				Work Ext.	Mobile
Justin Provo	Environmental, Health and Safety Manager	Emergency Response Coordinator	Pager Yes	262-243-8908	262-225-1043
Scott Thibodeau	General Manager	Technical Support			920-915-9204
Matthew Scudder	Operations Manager	See Section 3.0	Pager Yes	262-243-8917	262-416-8061
Leonard Ainsworth	Maintenance Mechanic II	Inspecting, maintaining, and repairing APC equipment.	Pager Yes	262-243-8900	
Nicolas Bonvicini	Operations Supervisor	Emergency Response Coordinator		262-243-8911	
Matthew Scudder	Operations Supervisor	Emergency Response Coordinator	Pager Yes	262-243-8917	
Michael Grittner	Operations Supervisor	Emergency Response Coordinator		262-243-8940	414-513-8086
Alex Swartzlander	Approval Coordinator	Technical Support	Pager Yes	262-243-8900	262-794-2450
Outside Consultants					
Melissa Bitter	Client Team leader - Foth Infrastructure & Environment, LLC			414-336-7935	414-340-0016
WDNR Contacts					
Alyssa Eggert	Air Management Engineer			920-309-0477	
Michael Szabo	Environmental Engineer Supervisor			414-208-8989	

APC = Air Pollution Control

Table 3. Summary of Recovery Operation Sensors & Monitors

Process ID & Description	Process Element / Device	Part of APC ¹	Component			Sensor / Monitor						
			Vacuum/Process	Flue Side/Heat Exch.	Hg Emission Control	Hg Monitor	Vacuum Sensor	Pressure Sensor	ΔP Sensor	ΔP Gauge	Temperature Sensor	Humidity Sensor
P10 - RipSys Retort	Oven - Vac Lines: Individual Drums	x	x				x					
	Oven - Vac Line: Manifold to Condenser/Packed Col.	x	x				x					
	Oven - Temperature			x							x	
	Oven - Exhaust Blower to C12			x				x			x	
	C12 - Heat Exchanger	x		x					x		x	
	S12 - U-pass Blower & Pre-filter			x					x			
	S18 - U-pass Blower Stack			x								
	Pre-Filter to C15	x			x	x			x			x
	C15 - Carbon Adsorber	x			x				x	x	x	
	S12 - I-pass Blower & Flue Stack				x	x						
P11 - Magna Drum Retort	Oven - Vac Lines: Individual Drums	x	x				x					
	Oven - Vac Line: Manifold to Condenser/Packed Col.	x	x				x					
	Oven - Temperature			x							x	
	Oven - Exhaust Blower to C13			x				x			x	
	C13 - Heat Exchanger	x		x					x		x	
	S13 - U-pass Blower & Pre-filter			x					x			
	S19 - U-pass Blower Stack			x								
	Pre-Filter to C16	x			x	x			x			x
	C16 - Carbon Adsorber	x			x				x	x	x	
	S13 - I-pass Blower & Flue Stack				x	x						
P14 - Wisconsin Oven Retort	Oven - Vac Lines: Individual Drums	x	x				x					
	Oven - Vac Line: Manifold to Condensers (WI Oven)	x	x				x					
	Oven - Temperature			x							x	
	Oven - Exhaust Blower to C14			x				x			x	
	C14 - Heat Exchanger	x		x					x		x	
	S17 - U-pass Blower & Pre-filter			x					x			
	S20 - U-pass Blower Stack			x								
	Pre-Filter to C17	x			x	x			x			x
	C17 - Carbon Adsorber	x			x				x	x	x	
	S17 - I-pass Blower & Flue Stack				x	x						
Packed Column Condenser System (PCCS)	PCCS for P10 & P11 Oven Vacuum Manifolds	x	x								x	
	C09 - Carbon Adsorber	x			x				x			
	S11 - Stack to Blower for C09 & C11				x							
Wisconsin Oven Condenser System (WOCS)	WOCS for P14 Oven Vacuum Manifold	x	x								x	
	C11 - Carbon Adsorber	x			x				x			
	S15 - Stack to Blower for C09 & C11				x							
Retort Room	F99 Retort Room / C09 & C11 Blower		x			x						
	Pre-Filter to C10	x			x					x		
	C10 - Carbon Adsorber	x			x	x			x	x		
	S14 - Blower & Room Stack				x	x						

Notes

1. Process elements are considered to be part of associated air pollution control (APC) equipment for the purpose of this MPAP.

Table 4. Maintenance Activity, Calibration and Spare Part Inventory

Device Description	Activities		Spare Parts Inventory [At least 1 of the following]
	Description	Frequency [Minimum / Typical]	
APC Equipment	Maintenance		
Lamp Recycling			
Cartridge Collector (C01) P01 - Model 2000 (Blue) Lamp Machine	Inspect Filters (dust collection & carbon filters)	Annually / Monthly	Replacement cartridge
	Inspect ductwork, piping, sealing components	Annually / Monthly	
	Inspect to verify required components are in place and undamaged	Annually / Weekly	
	Check that air compressor is on & the units purging system properly operates	Annually / Weekly	
	Check pressure drop is within range (0.4 to 6 in-H2O)	Greater of every 8-hours of operation or 1x/day	Backup magnehlic gauge
Adsorber - Activated Carbon Bed (C02) P01 - Model 2000 (Blue) Lamp Machine	Inspect to verify required components are in place and undamaged	Annually / Weekly	None
	Clean internal screens	Annually / As needed	
	Check bed temperature is w/in range (ambient +/- 15°F)	Greater of every 8-hours of operation or 1x/day	
	Check pressure drop is within range (1 - 12 in-H2O)	Greater of every 8-hours of operation or 1x/day	
	Check Hg concentration downstream of adsorber & blower <= 0.3671 mg/m³	Daily when operating / 8-hours of operation	
	Replace activated carbon	As needed	
Cartridge Collector w/HEPA Filter (C04) P08 - LSS1 (Green) Lamp Machine	Inspect Filters	Annually / Monthly	Replacement cartridge
	Inspect ductwork, piping, sealing components	Annually / Monthly	
	Inspect to verify required components are in place and undamaged	Annually / Weekly	
	Check that air compressor is on & the units purging system properly operates	Annually / Weekly	
	Check motor amps and rotation of fan motor	Annually	
	Check pressure drop is within range (0.4 to 6 in-H2O)	Greater of every 8-hours of operation or 1x/day	Backup magnehlic gauge
Adsorber - Activated Carbon Bed (C05) P08 - LSS1 (Green) Lamp Machine	Inspect to verify required components are in place and undamaged	Annually / Weekly	None
	Clean internal screens	Annually / As needed	
	Check bed temperature is w/in range (ambient +/- 15°F)	Greater of every 8-hours of operation or 1x/day	
	Check pressure drop is within range (1 - 12 in-H2O)	Greater of every 8-hours of operation or 1x/day	
	Check Hg concentration downstream of adsorber & blower <= 0.4752 mg/m³	Daily when operating / 8-hours of operation	
	Replace activated carbon	As needed	
Mercury Recovery Operations			
Vacuum Lines P10 - RipSys Retort P11 - Magna Drum Retort P14 - Wisconsin Oven Retort	Non-destructive test of thickness	Prior to placing into service	Spare piping for lines
	Dye-penetrant inspection of welds	Prior to placing into service	
	Inspect lines & associated joints, connections and clamps	Start of each batch	
	Check pressure sensor is at least 0.05 in-Hg	Ongoing during operation	
Packed Column Condenser System (PCCS) P10 - RipSys Retort P11 - Magna Drum Retort	Visually inspect condenser system	Start of each batch	None
	Check water temperature within packed bed is <= 80°F	Ongoing during operation	
	Clean packed bed or scrubber reservoir	As needed	
	Clean packed bed or scrubber reservoir (drain sediment from water reservoir)	Quarterly / As needed	
	26-Ton Chiller: Vapor stream temperature no greater than 80°F	Ongoing during operation	
26-Ton Chiller: Glycol coolant temperature within range	Periodically during shift		
Wisconsin Oven Condenser System (WOCS) P14 - Wisconsin Oven Retort	Visually inspect condenser system	Start of each batch	None
	Check temperature of discharge water <= 70°F	Ongoing during operation	
	Check water circulation system for leaks and blockage	Quarterly	
	30-Ton Chiller: Vapor stream temperature maintained w/in range - see Note 1	Ongoing during operation	
	30-Ton Chiller: Inspect refrigeration system	Annually	
	30-Ton Chiller: Inspect glycol system for leaks and damaged plumbing	Annually	
	30-Ton Chiller: Test glycol for proper effective cooling limit -30°F	Annually	
	30-Ton Chiller: Glycol coolant temperature within range	Periodically during shift	

Table 4. Maintenance Activity, Calibration and Spare Part Inventory

Device Description	Activities		Spare Parts Inventory [At least 1 of the following]
	Description	Frequency [Minimum / Typical]	
Adsorber w/Pre-Filter (C15, C16, C17) P10 - RipSys Retort P11 - Magna Drum Retort P14 - Wisconsin Oven Retort	Inspect to verify required components are in place and undamaged	Annually / Weekly	None
	Check pre-filter is undamaged & pressure drop is within range (0.1 to 2 in-H ₂ O)	Greater of every 8-hours of operation or 1x/day	
	Check pressure drop across adsorber is within range (see sec. 6.2.1 to 6.2.3)	Greater of every 8-hours of operation or 1x/day	
	Maintain pre-filter inlet temperature <=140°F otherwise shutdown initiates	Ongoing during operation	
	Change inlet pre-filter	Quarterly (P11 & P10), Semiannual (P14)	
	Lubricate fan and motor bearings	Quarterly (P11 & P10), Semiannual (P14)	
	Check V-belt tension & for wear, fraying & cracks. Replace & adjust, as required.	Quarterly (P11 & P10), Semiannual (P14)	
	Check Hg concentration upstream of pre-filter	As needed when trouble-shooting	
	Check Hg concentration downstream of adsorber & blower - see Note 2	Daily when operating	
	I-pass Blower: Inspect for structural defects, loose hardware, distortion	Monthly (P10, P14), Semiannual (P11)	
	I-pass Blower: Test power transmission components (operation, tension, wear, lube)	Monthly (P10, P14), Semiannual (P11)	
	I-pass Blower: Inspect stack network, including heat exchanger and air bleed damper	Monthly (P10, P14), Semiannual (P11)	
	Check Hg concentration downstream of adsorber & blower <= 0.020 mg/m ³	Greater of every 8-hours of operation or 1x/day	
	Check carbon vessels for leaks and blockage	Quarterly	
	Replace activated carbon	As needed	
Adsorber - Activated Carbon Bed (C09, C11) P10 - RipSys Retort P11 - Magna Drum Retort P14 - Wisconsin Oven Retort	Inspect to verify required components are in place and undamaged	Annually / Weekly	Activated Carbon
	Check pressure drop is within range (1 - 15 in-H ₂ O)	Greater of every 8-hours of operation or 1x/day	
	Check bed temperature at inlet is < 150°F	Weekly	
	Check condition of blower drive belt	Annually	
	Check carbon vessels for leaks and blockage	Quarterly	
	Replace activated carbon	As needed	
Adsorber w/Pre-Filter (C10) C09 - Adsorber Exhaust C11 - Adsorber Exhaust Retort Room	Inspect to verify required components are in place and undamaged	Annually / Weekly	None
	Check pre-filter pressure drop is within range (2 to 10 in-H ₂ O w/adsorber)	Greater of every 8-hours of operation or 1x/day	
	Check bed temperature is w/in range (ambient +/- 15°F)	Weekly	
	Check Hg concentration upstream of pre-filter	As needed when trouble-shooting	
	Check Hg concentration downstream of adsorber & blower <= 0.9469 mg/m ³	Daily when operating / 8-hours of operation	
	Check condition of blower drive belt (S14)	Annually	
	Check carbon vessels for leaks and blockage	Quarterly	
	Replace activated carbon	As needed	
	Retort Room Air Handler: Lubricate motor and blower bearings	Semiannually	
	Retort Room Air Handler: Inspect drive belts for wear & tension	Semiannually	
	Retort Room Air Handler: Inspect ductwork (condition, seal integrity, corrosion, etc.)	Semiannually	
	Retort Room Air Handler: Test damper actuators	Semiannually	
	Retort Room Air Handler: Measure & record air flow rate (CFM)	Semiannually	
Heat Exchanger C12 - Heat Exchanger C13 - Heat Exchanger C14 - Heat Exchanger	Inspect to verify required components are in place and undamaged	Annually / Weekly	None
	Check pre-filter pressure drop is within range (0.5 to 2.0 in-H ₂ O)	Greater of every 8-hours of operation or 1x/day	
	Maintain discharge temperature < 120°F otherwise alarm initiated/recorded	Ongoing during operation	
	Verify that condensate drain is intact and draining properly	Weekly	
	Verify that dampers on fresh air vent are unobstructed and operating freely	Weekly	
	Clean solids from interior of heat exchanger	As needed	
	U-Pass Blower: Inspect for structural defects, loose hardware, distortion	Semiannually	
	U-Pass Blower: Test power transmission components (operation, tension, wear, lube)	Semiannually	
	U-Pass Blower: Inspect ducting of stack network	Semiannually	

Table 4. Maintenance Activity, Calibration and Spare Part Inventory

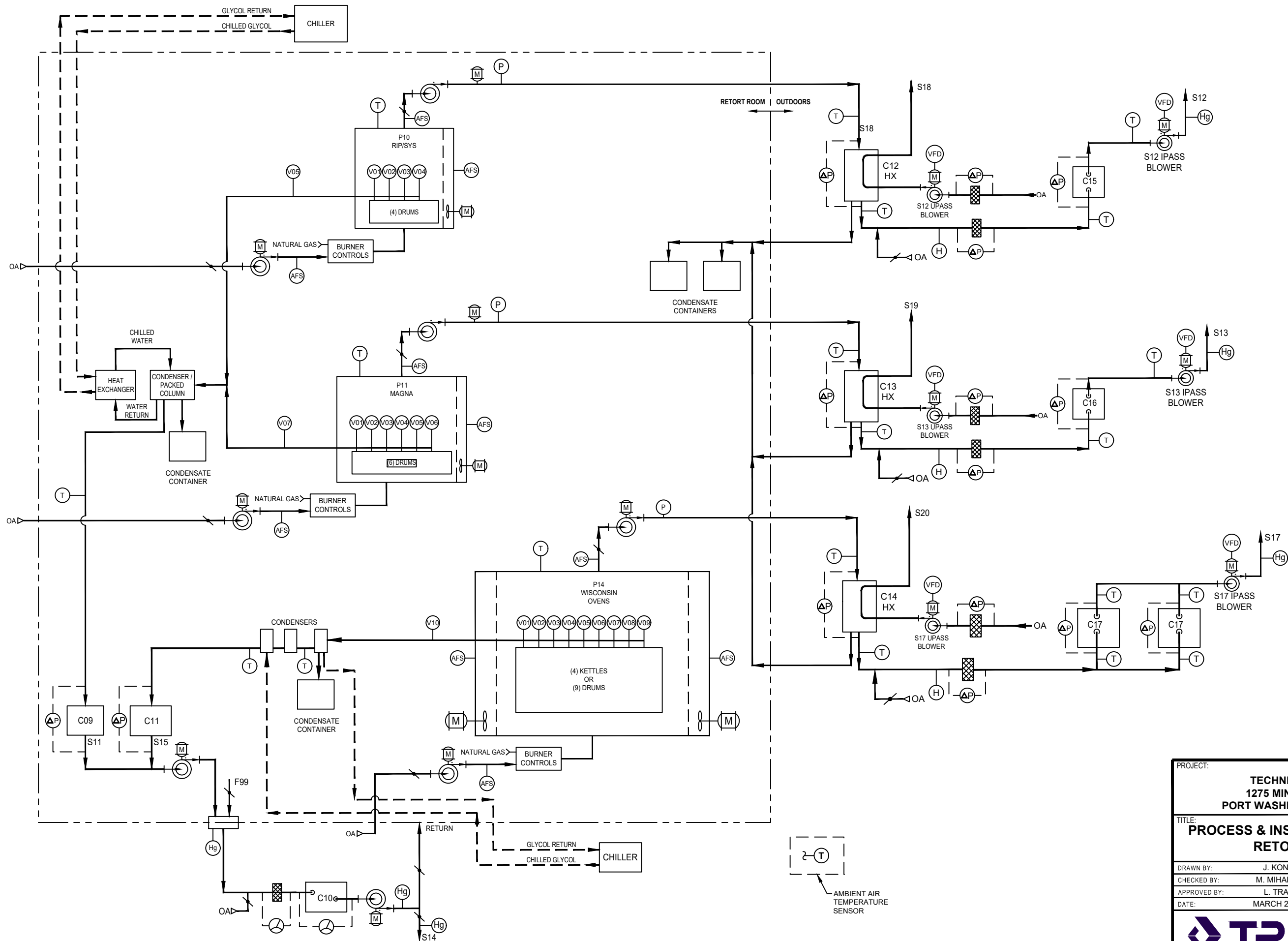
Device Description	Activities		Spare Parts Inventory [At least 1 of the following]
	Description	Frequency [Minimum / Typical]	
Sensor/Monitor	Maintenance & Calibration	Maintenance / Calibration	
Vacuum Sensor	Check for proper operation & calibrated internally or by qualified 3rd party	Annually	Not applicable
ΔP Sensor	Check for proper operation & calibrated internally or by qualified 3rd party	Annually	Not applicable
ΔP Gauge - see Note 3	Check for proper operation & calibrated internally or by qualified 3rd party	Annually	Not applicable
Temperature Sensor - Thermocouple	Check for proper operation & calibrated internally or by qualified 3rd party	Annually - Note 4	Not applicable
Temperature Sensor - RTD	Check for proper operation & calibrated internally or by qualified 3rd party	Annually - Note 4	Not applicable
Temperature Sensor - Analog Thermometer	Check for proper operation & calibrated internally or by qualified 3rd party	Annually - Note 4	Not applicable
Mercury (Hg) Monitor - Jerome 431-X	Check for proper operation & calibrated internally or by qualified 3rd party	Annually	Not applicable
Mercury (Hg) Monitor - VM-3000	Check for proper operation & calibrated internally or by qualified 3rd party	Annually	Not applicable
Mercury (Hg) Monitor - Rental	Check for proper operation & calibrated internally or by qualified 3rd party	Annually	Not applicable

Notes

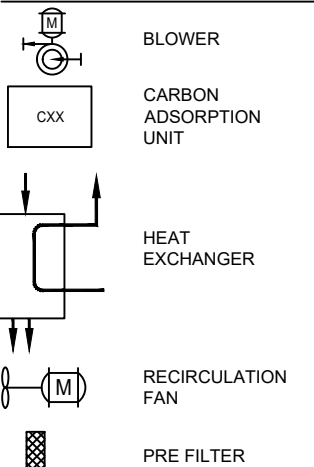
1. WOCS: Equipped with three condensers in series with temperature sensors after 1st and 3rd. Shutdown is initiated if coolant temperature after the 1st and 3rd units are greater than 120° and 80°F, respectively.
2. Condition I.C.2.a.(2) limit for S14 is 0.9469 mg/m³. Absent limits for S12, S13 & S17, Veolia proposed 0.010 mg/m³ in an August 12, 2018, NR 407 permit revision application submitted to the WDNR.
3. May include Magnehelic® or Photohelic® gauges.
4. Calibrated annually or per manufacturer recommendations, whichever if more frequent.

11x17 -- USER: J.Koniar -- ATTACHED XREFS: -- ATTACHED IMAGES: -- PLOT DATE: March 03, 2025 - 11:52AM -- LAYOUT: FIGURE 4-2
DRAWING NAME: J:\Veolia ES\656209\656209-01.dwg

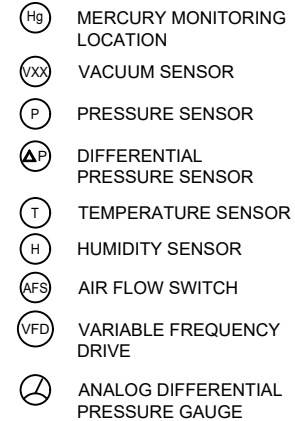
Version: 2017-10-21




SYMBOLS



LEGEND



PROJECT:		VEOLIA ES TECHNICAL SOLUTIONS, LLC 1275 MINERAL SPRINGS DRIVE PORT WASHINGTON, WISCONSIN 53074	
TITLE:		PROCESS & INSTRUMENTATION DIAGRAM RETORT OPERATIONS	
DRAWN BY:	J. KONIAR	PROJ NO.:	656209
CHECKED BY:	M. MIHALEK	FIGURE 4-2	
APPROVED BY:	L. TRAMM		
DATE:	MARCH 2025		
		6737 West Washington St. Suite 3460 West Allis, WI 53214 Phone: 262.879.1212	
		FILE NO.:	
		656209-01.dwg	

Links to Attachments

Attachment A	Forms
Attachment B	Key Operating Parameters
Attachment C	Malfunction Cause and Detection Review

MALFUNCTION PREVENTION AND ABATEMENT PLAN

Attachment A - Forms

Emission Controls Weekly Inspection Form, ([999F023](#))

Air Monitoring Log, ([999F040](#))

Retort Batch Worksheet ([999F070](#))

Verification Form ([999F028](#))

Sample Work Order ([WO 6416](#))

PORT WASHINGTON MINERAL SPRINGS
EMISSION CONTROL DEVICES WEEKLY INSPECTION



Date: _____ Time: _____

Inspector: _____ Approved: _____

Inspection Description	Observations/Comments	Corrections Made
Control Device C01, Torit Canister Filter on Model 2000 (Blue) Lamp Machine		
All required components are in place and undamaged.		
Air compressor is on and the units purging system is operating properly.		
Pressure drcp across the filter is within normal range (0.4 - 6 in. wc)		
Control Device C02, Activated Carbon bed on Model 2000 (Blue) Lamp Machine		
All required components are in place and undamaged.		
Pressure drcp across the filter is within normal range (in. wc)		
Temperature within the carbon bed is within range (ambient +/- 15°F)		
Control Device C04, HEPA Filter for LSS1 (Green) Lamp Machine		
All required components are in place and undamaged.		
Air compressor is on and the units purging system is operating properly.		
Pressure drcp across the filter is within normal range (0.4 - 6 in. wc)		
Control Device C05, Activated Carbon bed on LSS1 (Green) Lamp Machine		
All required components are in place and undamaged.		
Pressure drop across the filter is within normal range (in. wc)		
Temperature within the carbon bed is within range (ambient +/- 15°F)		

Control Device C09, Activated Carbon Adsorber on RipSys and Magna Drum Retort		
All required components are in place and undamaged.		
Pressure drop across the filter is within normal range (in. wc)		
Temperature within the carbon bed is within range (exhaust temp +/- 15°F)		
Control Device C10, Activated Carbon Adsorber for retort room		
All required components are in place and undamaged.		
Pressure drop across the filter is within normal range (in. wc)		
Temperature within the carbon bed is within range (exhaust temp +/- 15°F)		
Control Device C11, Activated Carbon Adsorber on Wisconsin Oven Retort		
All required components are in place and undamaged.		
Pressure drop across the filter is within normal range (in. wc)		
Temperature within the carbon bed is within range (exhaust temp +/- 15°F)		
C12 Air to air heat exchanger for Rip Sys retort flue stack (S12)		
All required components are in place and undamaged.		
Pressure drop across the exchanger is within normal range (in. wc)		
Condensate drain is intact and draining properly		
Dampers on fresh air vent is unobstructed and operating freely		
C13 Air to air heat exchanger for Magna Drum retort flue stack (S13)		
All required components are in place and undamaged.		
Pressure drop across the exchanger is within normal range (in. wc)		

PORT WASHINGTON MINERAL SPRINGS
EMISSION CONTROL DEVICES WEEKLY INSPECTION



Condensate drain is intact and draining properly		
Dampers on fresh air vent is unobstructed and operating freely		
C14 Air to air heat exchanger for Wisconsin Oven retort flue stack (S17)		
All required components are in place and undamaged.		
Pressure drop across the exchanger is within normal range (in. wc)		
Condensate drain is intact and draining properly		
Dampers on fresh air vent is unobstructed and operating freely		
C15 Carbon Adsorber for Rip Sys retort flue stack (S12)		
All required components are in place and undamaged.		
Pressure drop across the filter is within normal range (in. wc)		
Temperature within the carbon bed is within range (exhaust temp +/- 15°F)		
Pre-filter is undamaged and pressure drop is within normal range (in. wc)		
C16 Carbon Adsorber for Magna Drum retort flue stack (S13)		
All required components are in place and undamaged.		
Pressure drop across the filter is within normal range (in. wc)		
Temperature within the carbon bed is within range (exhaust temp +/- 15°F)		
Pre-filter is undamaged and pressure drop is within normal range (in. wc)		
C17 Carbon Adsorber for Wisconsin Oven retort flue stack (S17)		
All required components are in place and undamaged.		
Pressure drop across the filter is within normal range (in. wc)		

PORT WASHINGTON MINERAL SPRINGS
EMISSION CONTROL DEVICES WEEKLY INSPECTION



Temperature within the carbon bed is within range (exhaust temp +/- 15°F)		
Pre-filter is undamaged and pressure drop is within normal range (in. wc)		
Additional Inspections		
All current and prior week emission monitoring results are within acceptable ranges as noted on air monitoring logs		
Air Compressor – All required components are in place and undamaged, compressor engages at 95 psi and shuts off at 125 psi, test safety valve, drain water from tank.		

AIR MONITORING LOG

Sampling Points must be recorded once per shift or every 8 hours when operating. "N/O" = Emission Source that is not operating				Date:	Date:	Date:
				Time:	Time:	Time:
				Sampler:	Sampler:	Sampler:
Sample No.	Description	Permit ID (Limit)	Units	Jerome #:	Jerome #:	Jerome #:
1	Main Office		mg/m ³			
2	Lab/Locker Room		mg/m ³			
3	Warehouse Dock Area		mg/m ³			
4	Green Lamp Machine Exhaust	S08 (0.4752)	mg/m³			
5	Green Lamp Machine Carbon Magnehelic	C05 (1-12)	inches			
5a	Green Lamp Machine Carbon Temperature		F			
6	Green Lamp Machine Feed Station		mg/m ³			
7	Blue Lamp Machine Feed Station		mg/m ³			
8	Lamp Machine Room		mg/m ³			
9	Green Lamp Machine Torit Magnehelic	C04 (0.4-6)	inches			
10	Blue Lamp Machine Torit Magnehelic	C01 (0.4-6)	inches			
11	Blue Lamp Machine Exhaust	S01 (0.3671)	mg/m³			
12	Blue Lamp Machine Carbon Magnehelic	C02 (1-12)	inches			
12a	Blue Lamp Machine Carbon Temperature		F			
13	CFL Discharge to Blue Lamp Line		mg/m ³			
14	CFL System Dust Collector Magnehelic		Inches			
15	Retort Room Air Handler Exhaust	S14 (0.9469)	mg/m³			
16	Exhaust Stack Damper Setting		% open			
17	Retort Room Carbon pre-filter Magnehelic	C10 (0.3-5)	inches			
18	Retort Room Carbon Magnehelic	C10 (1-8)	inches			
18a	Retort Room Carbon Temperature		F			

AIR MONITORING LOG

19	Rip Sys Oven Flue Stack Pre-filter Magnehelic	C15 (0.1-2)	inches			
20	Rip Sys Oven Flue Stack Carbon Magnehelic	C15 (0.4-22)	inches			
20a	Rip Sys Oven Flue Stack Carbon Temperature	C15 (150)	F			
21	Magna Oven Flue Stack Pre-filter Magnehelic	C16 (0.1-2)	inches			
22	Magna Oven Flue Stack Carbon Magnehelic	C16 (0.4-22)	inches			
22a	Magna Oven Flue Stack Carbon Temperature	C16 (150)	F			
23	Wisconsin Oven Flue Stack Pre-filter Magnehelic	C17 (0.1-2)	inches			
24	Wisconsin Oven Flue Stack Carbon Magnehelic #1	C17 (1-28)	inches			
24a	Wisconsin Oven Flue Stack Carbon #1 Temperature	C17 (150)	F			
25	Wisconsin Oven Flue Stack Carbon Magnehelic #2	C17 (1-28)	inches			
25a	Wisconsin Oven Flue Stack Carbon #2 Temperature	C17 (150)	F			
26	Rip Sys Oven Flue Stack Exhaust	S12 (0.020)	mg/m ³			
27	Magna Oven Flue Stack Exhaust	S13 (0.020)	mg/m ³			
28	Wisconsin Oven Flue Stack Exhaust	S17 (0.020)	mg/m ³			
29	Retort System Exhaust (inside room exhaust duct)		mg/m ³			
30	Operations Area outside Retort Room		mg/m ³			
31	Inside Retort Room (near workbench)		mg/m ³			
32	Magna/Rip Carbon Magnehelic	C09 (1-15)	inches			
32a	Magna/Rip Carbon Temperature		F			
33	Wisconsin Oven Carbon Magnehelic	C11 (1-15)	inches			
33a	Wisconsin Oven Carbon Temperature		F			
34	All systems operating in green on Control Panel Display or not operating			<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
35	Jerome Regeneration(enter time if regenerated)					

AIR MONITORING LOG

Comments/Corrective Actions:

Reviewed by:		Date:	
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Instructions

1. Verify that the Jerome has been regenerated and has not been used since the last regeneration.
 - a. If the Jerome has not been regenerated, plug the meter in using the AC power supply cord, attach the zero air filter to the sampling probe and regenerate the meter.
2. Verify that it has been at least thirty minutes since regeneration of the meter. If not, wait 30 minutes, then zero the meter following procedures outlined in the Users Manual.

DO NOT re-zero the meter unless it has been regenerated.

3. Record the following in the first row of the sampling form.
 - a. Date
 - b. Time (using a 24 hour clock)
 - c. Sampler's initials
 - d. Jerome Serial Number
4. Perform the air sampling at the designated points on the form.
5. If a process is not operating at the time of the sampling event, note this by writing the letters "N/O" in the results space. However, if a piece of equipment is only operating for part of a shift it must be sampled while operating.
6. If any Jerome meter readings or magnehelic readings for **bolded** items are outside the permit limits noted on the form, immediately notify the Environmental Health and Safety Manager and the Operations Manager.
7. If there are any unusual circumstances or significant observations while sampling please note these in the comments section of the form.
8. When finished sampling, connect the Jerome to an AC power supply, attach a zero air filter to the sampling probe and initiate the regeneration of the unit.
9. Enter the time that the regeneration was started onto the sampling form.
10. Leave the sampling form in the lab so the next person to use the meter can verify it has been regenerated.
11. The combined pressure drop across the retort room carbon unit and carbon unit pre-filters must be between 2 and 10 inches.

RETORT BATCH WORKSHEET

Date:		Batch Number:	
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Inspection Criteria	Yes	No	Initials
All containers loaded into the oven are properly closed and suitable for use based on visual inspection?			
While loading the oven the vacuum lines were inspected and found to be free of visible defects, including articulating joints, connections and clamps, associated with each active retort vessel and drum?			
The chiller is operating and within proper operating temperature?			
Vacuum pump is operational and vacuum level to each container is within acceptable limits?			

If the answer to any of the above questions is no, the start-up process must be halted and the deficiency corrected before starting the batch. Place the document number tear-off label or write the container number in the position below corresponding to the location of the vessel.

Location (Sensor)	Container / Kettle Number (Doc. Number)	Location (Sensor)	Container / Kettle Number (Doc. Number)
1		6	
2		7	
3		8	
4		9	
5			

Vacuum Sensors Location	Vacuum Range	Vacuum Reading	Deviation	Pass/Fail (+/- 1 in.)	Date Time	Inspect or Initials	Approved Initials
Rip Sys Retort Oven Process Side							
PIT2134 - Vacuum in Drum 1 Position	0.05-6.0						
PIT2136 - Vacuum in Drum 2 Position	0.05-6.0						
PIT2138 - Vacuum in Drum 3 Position	0.05-6.0						
PIT2140 - Vacuum in Drum 4 Position	0.05-6.0						
PIT2203 - Vacuum Header Line	0.05-8.0						
Magna Retort Oven Process Side							
PIT2111 - Vacuum in Drum 1 Position	0.05-12.0						
PIT2113 - Vacuum in Drum 2 Position	0.05-12.0						
PIT2115 - Vacuum in Drum 3 Position	0.05-12.0						
PIT2117 - Vacuum in Drum 4 Position	0.05-12.0						
PIT2126 - Vacuum in Drum 5 Position	0.05-12.0						
PIT2128 - Vacuum in Drum 6 Position	0.05-12.0						
PIT2130 - Vacuum Header Line	0.05-12.0						
Wisconsin Retort Oven Process Side							
PIT2028 - Vacuum in Drum 1 Position	0.05-12.0						
PIT2030 - Vacuum in Drum 2 Position	0.05-12.0						
PIT2032 - Vacuum in Drum 3 Position	0.05-12.0						
PIT2034 - Vacuum in Drum 4 Position	0.05-12.0						
PIT2036 - Vacuum in Drum 5 Position	0.05-12.0						
PIT2038 - Vacuum in Drum 6 Position	0.05-12.0						
PIT2040 - Vacuum in Drum 7 Position	0.05-12.0						
PIT2103 - Vacuum in Drum 8 Position	0.05-12.0						
PIT2105 - Vacuum in Drum 9 Position	0.05-12.0						
PIT2107 - Vacuum Header Line	0.05-12.0						

**PORT WASHINGTON EMISSION CONTROL DEVICES
VERIFICATION FORM**

EVENT (Startup of or Annual) _____

SAMPLING EVENT (Equipment or Year) _____

Magnehelic & Photohelic Gauge Location (MPAP 5.1.1)	Magnehelic Range	Magnehelic Reading	Manometer Reading	Deviation	Pass/Fail (+/- 1 in.)	Date Time	Inspector Initials	Approved Initials
LAMP MACHINES								
Control Device C01, Torit Canister Filter on Model 2000 (Blue) Lamp Machine	0-8							
Control Device C02, Activated Carbon Adsorber for Model 2000 (Blue) Machine	1-12							
Control Device C01, HEPA Filter on CFL Lamp Machine	0-8							
Control Device C04, HEPA Filter for LSS1 (Green) Lamp Machine	0-8							
Control Device C05, Activated Carbon Adsorber for LSS1 (Green) Lamp Machine	1-12							
RETORT OVEN PROCESS SIDE								
Control Device C09, Activated Carbon	0-6							

Adsorber for Magna/Rip Retort Ovens inside retort room								
Control Device C11, Activated Carbon Adsorber for Wiscnsin Retort Oven inside retort room	0-6							
Control Device C10, Activated Carbon Adsorber prefilter for retort room	0-3							
Control Device C10, Activated Carbon Adsorber for retort room	0-10							
RETORT OVENS FLUE GAS SIDE								
Rip/Sys Oven Retort Flue Gas								
PIT2132 - Oven Flue Gas Stack Pressure. S12 Prior to C12	0.5-40							
PDT512 - C12 Heat Exchanger Differential Pressure	0.5-2.5							
PDT513 - C15 Carbon Pre-filter Differential Pressure (I-Pass)	0.1-2.0							
PDT514 - C15 Carbon Differential Pressure	0.4-22							
PDT515 - C12 Exchanger U-Pass Pre-filter Differential Pressure	0.1-2.0							
Magna Oven Retort Flue Gas								
PIT2109 - Oven Flue Gas Stack Pressure. S13 Prior to C13	0.5-40							

PDT501 - C13 Heat Exchanger Differential Pressure	0.5-2.5							
PDT502 - C16 Carbon Pre-filter Differential Pressure (I-Pass)	0.1-2.0							
PDT503 - C16 Carbon Differential Pressure	0.4-22							
PDT504 - C13 Exchanger U-Pass Pre-filter Differential Pressure	0.1-2.0							
Wisconsin Oven Retort Flue Gas								
PIT2026 - Oven Flue Gas Stack Pressure. S17 Prior to C14	0.2-40							
PDT436 - C14 Heat Exchanger Differential Pressure	0.5-2.0							
PDT437 - C17 Carbon Pre-filter Differential Pressure (I-Pass)	0.1-2.0							
PDT438 - C17A Carbon Differential Pressure	1.0-28							
PDT439 - C17B Carbon Differential Pressure	1.0-28							
PDT440 - C14 Exchanger U-Pass Pre-filter Differential Pressure	0.1-2.0							

Vacuum Sensors Location (MPAP 5.1.1)	Vacuum Range	Magnehelic Reading	Manometer Reading	Deviation	Pass/Fail (+/- 1 in.)	Date Time	Inspector Initials	Approved Initials
Rip Sys Retort Oven Process Side								
PIT2134 - Vacuum in Drum 1 Position	0.05-6.0							
PIT2136- Vacuum in Drum 2 Position	0.05-6.0							

PIT2138 - Vacuum in Drum 3 Position	0.05-6.0							
PIT2140 - Vacuum in Drum 4 Position	0.05-6.0							
PIT2203 - Vacuum Header Line	0.05-8.0							
Magna Retort Oven Process Side								
PIT2111 - Vacuum in Drum 1 Position	0.05-12.0							
PIT2113 - Vacuum in Drum 2 Position	0.05-12.0							
PIT2115 - Vacuum in Drum 3 Position	0.05-12.0							
PIT2117 - Vacuum in Drum 4 Position	0.05-12.0							
PIT2126 - Vacuum in Drum 5 Position	0.05-12.0							
PIT2128 - Vacuum in Drum 6 Position	0.05-12.0							
PIT2130 - Vacuum Header Line	0.05-12.0							
Wisconsin Retort Oven Process Side								
PIT2028 - Vacuum in Drum 1 Position	0.05-12.0							
PIT2030 - Vacuum in Drum 2 Position	0.05-12.0							
PIT2032 - Vacuum in Drum 3 Position	0.05-12.0							
PIT2034 - Vacuum in Drum 4 Position	0.05-12.0							
PIT2036 - Vacuum in Drum 5 Position	0.05-12.0							
PIT2038 - Vacuum in Drum 6 Position	0.05-12.0							
PIT2040 - Vacuum in Drum 7 Position	0.05-12.0							
PIT2103 - Vacuum in Drum 8 Position	0.05-12.0							
PIT2105 - Vacuum in Drum 9 Position	0.05-12.0							
PIT2107 - Vacuum Header Line	0.05-12.0							

Temperature Probes/Thermocouples/Thermometers (MPAP 5.2)	Temperature Range	Temperature Reading		Deviation	Pass/Fail (+/- 5 F.)	Date Time	Inspector Initials	Approved Initials
RTD612 At I/O Control Panel								
LAMP MACHINES								
Control Device C02, Activated Carbon Adsorber for Model 2000 (Blue) Machine								
Control Device C05, Activated Carbon Adsorber for LSS1 (Green) Lamp Machine								
RETORT OVENS PROCESSING								
Rip/Sys Oven								
T/C2412 Oven Temperature								
T/C2435 Condenser Ejector 1 Rip/Sys Oven	30-80							
Control Device C09, Activated Carbon Adsorber Rip/Magna Retort (S11)								
Magna Oven								
T/C2408 Oven Temperature								
T/C2433 Condenser Ejector 1 Rip/Sys Oven	30-80							
Wisconsin Oven								

T/C2404 Oven Temperature								
T/C2429 Post Condenser 1	-20-120							
T/C2431 Post Condenser 2	-20-80							
Control Device C11, Activated Carbon Adsorber for Retort Room Exhaust (S15)								
RETORT OVEN FLUE GAS								
Rip/Sys Oven								
T/C2414 C12 Heat Exchanger Incoming								
RTD712 C12 Heat Exchanger Outgoing								
RTD706 C15 Carbon Pre-filter								
RTD 731 C15 Carbon Differential Temperature								
Magna Oven								
T/C2410 C13 Heat Exchanger Incoming								
RTD702 C13 Heat Exchanger Outgoing								
RTD616 C16 Carbon Pre-filter								
RTD 737 C16 Carbon Differential Temperature								
Wisconsin Oven								
T/C2406 C14 Heat Exchanger Incoming								
RTD606 C14 Heat Exchanger Outgoing								

RTD606 C17 Carbon Pre-filter								
RTD 716 C17-1 Carbon Differential Temperature								
RTD 727 C17-2 Carbon Differential Temperature								

Preventive Maintenance Work Order

WORK ORDER NO... 6,416

ASSIGNED TO.....LENNYLENNY AINSWORTH

EQUIPMENT.....400A001

BLUE LAMPLINE (COMBINED SYSTEM)

LOCATION.....

REQUESTED BY.MIKE THOMAS

MODEL.....

SERIAL.....

MANUFACTURER..

LINE.....

WORK ORDER HEADER: PM-MONTHLYSHARED CONVEYOR - INSPECT CONVEYOR

SCHEDULED..... 10/04/2018

PRIORITY..... 0

WO REQUEST #.....

SUPERVISOR.....

ENTERED 9/20/2018 8:01 AM

STARTED / /

DEPT

SHIFT

STATUS: PRNTD

DATE DO TIME INITIALS

SEQ# DESCRIPTION

THINK SAFETY ALWAYS! COMPLETE ALL REQUIRED DOCUMENTATION PRIOR TO WORK

LOTO-017

FREQ: 30 DAYS

Last Done: 8/30/2018

Sch For: 9/29/2018

EST: 0.00 BY: BOB STEINIKE

* 6 MONTHLY

SHARED CONVEYOR - INSPECT CONVEYOR PADDLES AND CHAIN

CONDITION OF PADDLES: GOOD / FAIR / SCHEDULE SERVICE

DISCHARGE CONVEYOR - INSPECT CONVEYOR PADDLES AND CHAIN

CONDITION OF PADDLES: GOOD / FAIR / REPLACE

TROMMEL - INSPECT FOR DEBRIS, INSPECT SCREEN FOR HOLES/DAMAGE

CONDITION OF TROMMEL: GOOD / FAIR / SCHEDULE SERVICE

INCLINE CONVEYOR - CHECK FOR CRACKING/RIPS/DAMAGE

BELT CONDITION: GOOD / FAIR / SCHEDULE SERVICE

CRUSHER BOX - CHECK GAP ON CRUSHER AND ADJUST AS NEEDED

GAP ADJUSTED: YES / NO

FEED BELTS - CHECK FOR CRACKING/ RIPS/ DAMAGE/ ALIGNMENT

BELT CONDITION: GOOD / FAIR / SCHEDULE SERVICE

DUST COLLECTION FILTERS - INSPECT TORRIT AND CARBON FILTERS

FILTER CONDITION: GOOD / FAIR / SCHEDULE SERVICE

DUST COLLECTION PIPING -

PIPE CONDITION: GOOD / FAIR / SCHEDULE SERVICE

LAMP ROOM HOUSEKEEPING- MAKE SURE EQUIPMENT / DEBRIS IS NOT BUILDING UP
IN CORNERS OF THE ROOM. PROCESS EQUIPMENT ACCESS PANELS ARE SECURED
PROPERLY TO EQUIPMENT.

Total Estimated:

0.00

Total Time:

Time

Date

Initials

ADDITIONAL LABOR

Time

Date

Initials

Part Number

Description

ADDITIONAL PARTS

Location

QTY

Used

Preventive Maintenance Work Order

WORK ORDER NO... 6,416

ASSIGNED TO.....LENNYLENNY AINSWORTH

EQUIPMENT.....400A001

BLUE LAMPLINE (COMBINED SYSTEM)

LOCATION.....

REQUESTED BY.MIKE THOMAS

MODEL.....

SERIAL.....

MANUFACTURER..

LINE.....

WORK ORDER HEADER: PM-MONTHLYSHARED CONVEYOR - INSPECT CONVEYOR

SCHEDULED..... 10/04/2018

PRIORITY..... 0

WO REQUEST #.....

SUPERVISOR.....

ENTERED 9/20/2018 8:01 AM

STARTED / /

DEPT

SHIFT

STATUS: PRNTD

DATE DO TIME INITIALS

SEQ# DESCRIPTION

Comments

Approved By:

Inspected By:

MPAP Attachment B - Operating Parameters

S01 Monitoring Points

Sampling Point	Parameter	Sensor ID	Min	Low Warning	High Warning	Max	Expected	UOM
Pressure drop across the dust collector	Differential pressure	Magnehelic		0.4	1	4	6	2 in. wc
Pressure drop across carbon filter	Differential pressure	Magnehelic		1	4	8	12	6 in. wc
Pressure drop across CFL particulate filter	Differential pressure	Magnehelic			0.3	2		1 in. wc
Post CFL Carbon	Mercury Monitoring	Jerome or VM3000				0.025		0.01 mg/m3
Post C02 Carbon	Mercury Monitoring	Jerome or VM3000				0.015	0.3671	0.001 mg/m3
C02 Carbon	Temperature	Thermometer		40		120		70 F

MPAP Attachment B - Operating Parameters

S08 Monitoring Points

Sampling Point	Parameter	Sensor ID	Min	Low Warning	High Warning	Max	Expected	UOM
Pressure drop across dust collector	Differential pressure	Magnehelic		0.4	1	4	6	2 in. wc
Pressure drop across carbon filter	Differential pressure	Magnehelic		1	4	8	12	6 in. wc
Post C05 Carbon	Mercury Monitoring	Jerome or VM3000				0.015	0.4752	0.001 mg/m3
C05 Carbon	Temperature	Thermometer			40	120		70 F

Sampling Point	Parameter	ID	Min	Low Warning	High Warning	Max	Expected	UOM
At I/O Control Panel	Ambient Temperature	RTD612			Alarm internal - AC Turn On			F
Oven Temperature	Temperature	T/C2412	ambient				900	F
I-pass Blower	Hertz (correlated to CFM)	VFD226	TBD	TBD	TBD	TBD	TBD	
U-pass Blower	Hertz (correlated to CFM)	VFD214	TBD	TBD	TBD	TBD	TBD	
Stack Controls	Parameter	ID	Min	Low Warning	High Warning	Max	Expected	UOM
C12 Heat Exchanger - before	Temperature	T/C2414	ambient				900	F
Stack S12 prior to C12	Oven/Stack pressure	PIT3132		0.5	1	10	40	in wc
C12 Heat Exchanger	Differential Pressure	PDT512		0.5	0.75	1.25	2.5	0.82 in wc
C12 Heat Exchanger - after	Temperature	RTD712	ambient		32	160	180	F
C15 Carbon pre-filter	Temperature	RTD706		40	40	120	140	70 F
C15 Carbon pre-filter	Differential Pressure (pre-filter)	PDT513		0.1	0.2	0.75	2	0.25 in wc
C15 Carbon	Humidity	DV516						
C15 Carbon	Fresh air damper	DV843						% open
C15 Carbon	Differential Temperature	RTD731		N/A	N/A	10	15	F
C15 Carbon	Differential Pressure (@100 cfm)	PDT514		0.4	1	4	6	2 in wc
C15 Carbon	Differential Pressure (@500 cfm)	PDT514		1	2	8	10	5 in wc
C15 Carbon	Differential Pressure (@1000 cfm)	PDT514		8	10	18	22	15 in wc
C12 Exchanger U-pass pre-filter	Differential Pressure	PDT515		0.1	0.15	0.5	2	0.25 in wc
S12 Post Carbon (C15)	Mercury Monitoring	Jerome or VM3000	N/A	N/A		0.01	0.020	<0.005 mg/m3
Oven Controls	Parameter	Sensor ID	Min	Low Warning	High Warning	Max	Expected	UOM
Vac 1	Vacuum in Drum 1	PIT2134		0.05	0.25	4	6	2 in Hg
Vac 2	Vacuum in Drum 2	PIT2136		0.05	0.25	4	6	2 in Hg
Vac 3	Vacuum in Drum 3	PIT2138		0.05	0.25	4	6	2 in Hg
Vac 4	Vacuum in Drum 4	PIT2140		0.05	0.25	4	6	2 in Hg

MPAP Attachment B - Operating Parameters

S12 Sensors

Vac 5	Vacuum in Header line	PIT2203	0.05	0.25	6	8	4 in Hg
Cond 1	Temperature (Condenser Ejector)	T/C2435	30	35	60	80	40 F
C09 Carbon	Differential Pressure (same sensor for S13)	PIT2207	0.5	1	4	6	1.5 in wc
C09 Carbon	Temperature	Thermometer				140	F

Sampling Point	Parameter	Sensor ID	Min	Low Warning	High Warning	Max	Expected	UOM
At I/O Control Panel	Ambient Temperature	RTD612			Alarm internal - AC Turn On			F
Oven Temperature	Temperature	T/C2408	ambient				900	F
I-pass Blower	Hertz (correlated to CFM)	VFD202	TBD	TBD	TBD	TBD	TBD	
U-pass Blower	Hertz (correlated to CFM)	VFD139	TBD	TBD	TBD	TBD	TBD	
Stack Controls	Parameter	Sensor ID	Min	Low Warning	High Warning	Max	Expected	UOM
C13 Heat Exchanger - before	Temperature	T/C2410	ambient				900	F
Stack S13 prior to C13	Oven/Stack pressure	PIT2109		0.5	1	10	40	in wc
C13 Heat Exchanger	Differential Pressure (I-pass)	PDT501		0.5	0.75	1.25	2.5	0.82 in wc
C13 Heat Exchanger - after	Temperature	RTD702	ambient		32	160	180	70 F
C16 Carbon pre-filter	Temperature	RTD616		40	40	120	140	70 F
C16 Carbon pre-filter	Differential Pressure (pre-filter)	PDT502		0.1	0.15	0.75	2	0.25 in wc
C16 Carbon	Humidity	DV505						% open
C16 Carbon	Fresh air damper	DV838						
C16 Carbon	Differential Temperature	RTD737		N/A	N/A	10	15	5 F
C16 Carbon	Differential Pressure (@100 cfm)	PDT503		0.4	1	4	6	2 in wc
C16 Carbon	Differential Pressure (@500 cfm)	PDT503		1	2	8	10	5 in wc
C16 Carbon	Differential Pressure (@1000 cfm)	PDT503		8	10	18	22	15 in wc
C13 Exchanger U-pass pre-filter	Differential Pressure (U-Pass pre-filter)	PDT504		0.1	0.15	0.5	2	0.25 in wc
S13 Post Carbon (C16)	Mercury Monitoring	Jerome or VM3000	N/A	N/A		0.01	0.020	<0.001 mg/m3
Oven Controls	Parameter	Sensor ID	Min	Low Warning	High Warning	Max	Expected	UOM
Vac 1	Vacuum in Drum 1	PIT2111		0.05	0.25	4	6	2 in Hg
	Vacuum in Kettle 1			0.05	0.5	8	12	5 in Hg
Vac 2	Vacuum in Drum 2	PIT2113		0.05	0.25	4	6	2 in Hg
Vac 3	Vacuum in Drum 3	PIT2115		0.05	0.25	4	6	2 in Hg
Vac 4	Vacuum in Drum 4	PIT2117		0.05	0.25	4	6	2 in Hg

MPAP Attachment B - Operating Parameters

S13 Sensors

Vac 5	Vacuum in Drum 5	PIT2126	0.05	0.25	4	6	2 in Hg
Vac 6	Vacuum in Drum 6	PIT2128	0.05	0.25	4	6	2 in Hg
Vac 7	Vacuum in Header line	PIT2130	0.05	0.25	4	12	5 in Hg
Cond 1	Temperature (Condenser Ejector)	T/C2433	30	35	50	80	40 F
C09 Carbon	Differential Pressure (same sensor for S12)	PIT2207	0.5	1	4	6	1.5 in wc
C09 Carbon	Temperature	Thermometer				140	F

MPAP Attachment B - Operating Parameters

S14 Monitoring Points

Sampling Point	Parameter	Sensor ID	Min	Low Warning	High Warning	Max	Expected	UOM
Pressure drop across pre-filter	Differential pressure	Magnehelic		0.3	0.5	3.5	5	2 in. wc
Pressure drop across carbon filter	Differential pressure	Magnehelic		1	2	7	8	4.5 in. wc
Combined pressure drop across pre-filter and carbon unit	Differential pressure			2	3	8	10	6.5 in wc
Post C10 Carbon	Mercury Monitoring	Jerome or VM3000				0.015	0.9469	<0.010 mg/m3
C10 Carbon	Temperature	Thermometer					140	F

Sampling Point	Parameter	ID	Min	Low Warning	High Warning	Max	Expected	UOM
At I/O Control Panel	Ambient Temperature	RTD612			Alarm internal - AC Turn On			F
Oven Temperature		T/C2404	ambient				1175 oven set point	F
I-pass Blower	Hertz (correlated to CFM)	VFD126	TBD	TBD	TBD	TBD	TBD	
U-Pass Blower	Hertz (correlated to CFM)	VFD105	TBD	TBD	TBD	TBD	TBD	
Stack Contro s	Parameter	ID	Min	Low Warning	High Warning	Max	Expected	UOM
C14 Heat Exchanger - before	Temperature	T/C2406	ambient				1175 <oven set point	
Stack S17 prior to C14	Stack vacuum/ negative pressure	PIT2026		0.2	0.5	10	40	3 in wc
C14 Heat Exchanger	Differential Pressure	PT436		0.5	0.75	1.5	2	0.82 in wc
C14 Heat Exchanger - after	Temperature	RTD606	ambient		32	160	180	70 F
C17 Carbon pre-filter	Temperature	RTD602	ambient		40	120	140	70 F
C17 Carbon pre-filter	Differential Pressure (pre- filter)	PDT437		0.1	0.15	0.75	2	0.25 in wc
C16 Carbon	Fresh air damper setting	DV836						% open
C16 Carbon	Humidity	DV441						
C16 Carbon-1	Differential Temperature (Carbon 1)	RTD716		N/A	N/A	10	15	5 F
C16 Carbon-2	Differential Temperature (Carbon 2)	RTD727		N/A	N/A	10	15	5 F
C16 Carbon-1	Differential Pressure (Carbon 1 @ 500 cfm)	PDT438		1	2	4	5	3 in wc
C16 Carbon-1	Differential Pressure (Carbon 1 @ 1250 cfm)	PDT438		3	6	12	15	8 in wc
C16 Carbon-1	Differential Pressure (Carbon 1 @ 2000 cfm)	PDT438		10	12	24	28	20 in wc
C16 Carbon-2	Differential Pressure (Carbon 2 @ 500 cfm)	PDT439		1	2	4	5	3 in wc
C16 Carbon-2	Differential Pressure (Carbon 2 @ 1250 cfm)	PDT439		3	6	12	15	8 in wc
C16 Carbon-2	Differential Pressure (Carbon 2 @ 2000 cfm)	PDT439		10	12	24	28	20 in wc
C14 Exchanger U- pass pre-filter	Differntial Pressure	PDT440		0.1	0.15	0.5	2	0.25 in wc
S17 Post Carbon (C17)	Mercury Monitoring	Jerome or VM3000	N/A	N/A		0.01	0.02	<0.005 mg/m3

Oven Controls	Parameter	ID	Min	Low Warning	High Warning	Max	Expected	UOM
Vac 1	Vacuum in Drum 1	PIT2028		0.05	0.25	4	6	2 in Hg
	Vacuum in Kettle 1			0.05	0.5	8	12	5 in Hg
Vac 2	Vacuum in Drum 2	PIT2030		0.05	0.25	4	6	2 in Hg
Vac 3	Vacuum in Drum 3	PIT2032		0.05	0.25	4	6	2 in Hg
	Vacuum in Kettle 2			0.05	0.5	8	12	5 in Hg
Vac 4	Vacuum in Drum 4	PIT2034		0.05	0.25	4	6	2 in Hg
Vac 5	Vacuum in Drum 5	PIT2036		0.05	0.25	4	6	2 in Hg
Vac 6	Vacuum in Drum 6	PIT2038		0.05	0.25	4	6	2 in Hg
Vac 7	Vacuum in Drum 7	PIT2040		0.05	0.25	4	6	2 in Hg
	Vacuum in Kettle 3			0.05	0.5	8	12	5 in Hg
Vac 8	Vacuum in Drum 8	PIT2103		0.05	0.25	4	6	2 in Hg
Vac 9	Vacuum in Drum 9	PIT2105		0.05	0.25	4	6	2 in Hg
	Vacuum in Kettle 4			0.05	0.5	8	12	5 in Hg
Vac 10	Vacuum in Header line	PIT2107		0.05	0.25	4	12	5 in Hg
Post Condenser 1	Temperature	T/C2429	-20	-10	100		120	80 F
Post Condenser 3	Temperature	T/C2431	-20	-10	60		80	40 F
C11 Carbon	Differential Pressure	PIT2205		0.5	1	4	6	1.5 in wc
C11 Carbon	Temperature	Thermometer					140	F

MPAP Attachment C- Malfunction Cause and Detection Review: S01 Blue Lamp Line

Control Device	Description	Measure	Condition - Cause	Response Activity
C01	Pre-filter Magnehilc	Pressure drop across filter	Below pressure drop minimum - due to breach of filter cartridge	Shutdown system and replace filters
			Below pressure drop low warning - due to high pressure drop across carbon	Monitor for continued decrease in pressure drop and reference fouled carbon procedures below
			Above pressure drop high warning - fouled filters	Verify purge system is operating properly and make repairs as necessary. Replace filters if purging system is operating properly.
			Above pressure drop high warning - due to low pressure drop across carbon	Shutdown system and see barbon by-pass below.
			Above pressure drop maximum - fouled filters	Shutdown system and replace filters
			Above pressure drop maximum - due to low pressure drop across carbon	Shutdown system and see barbon by-pass below.
C02	Carbon Magnehelic	Pressure drop across carbon	Below pressure drop low warning - due to fouled cartridge filters	See cartridge filter high warning due to fouled filters above
			Below pressure drop minimum - due to fouled cartridge filters	Shutdown system and reference fouled filters above
			Below pressure drop minimum - due to air flow bypassing carbon bed	Shutdown system and inspect carbon bed for signs of channeling, replace carbon as needed
			Above pressure drop high warning - breached pre-filters	Shutdown system and replace cartridge filters
			Above pressure drop high warning - fouled carbon	Inspect carbon for buildup of fine particulates, replace carbon as necessary
			Above pressure drop maximum - breached pre-filters	See breached filters above
			Above pressure drop maximum - fouled carbon	Shutdown system and replace carbon as necessary
C02	Post Carbon - Merucry Meter	Mercury Levels	Above warning limit (0.015 mg/m3)	Shutdown system, replace carbon
			Above maximum (0.3671 mg/m3)	Shutdown system, replace carbon
	Power Failure			System shuts down and must be manually restarted

MPAP Attachment C- Malfunction Cause and Detection Review: S08 Green Lamp Line

Control Device	Description	Measure	Condition - Cause	Response Activity
C04	Cartridge Filter Magnehilc	Pressure drop across filter	Below pressure drop minimum - due to breach of filter cartridge	Shutdown system and replace filters
			Below pressure drop low warning - due to high pressure drop across carbon	Monitor for continued decrease in pressure drop and reference fouled carbon procedures below
			Above pressure drop high warning - fouled filters	Verify purge system is operating properly and make repairs as necessary. Replace filters if purging system is operating properly.
			Above pressure drop high warning - due to low pressure drop across carbon	Shutdown system and see barbon by-pass below.
			Above pressure drop maximum - fouled filters	Shutdown system and replace filters
			Above pressure drop maximum - due to low pressure drop across carbon	Shutdown system and see barbon by-pass below.
C05	Carbon Magnehelic	Pressure drop across carbon	Below pressure drop low warning - due to fouled cartridge filters	See cartridge filter high warning due to fouled filters above
			Below pressure drop minimum - due to fouled cartridge filters	Shutdown system and reference fouled filters above
			Below pressure drop minimum - due to air flow bypassing carbon bed	Shutdown system and inspect carbon bed for signs of channeling, replace carbon as needed
			Above pressure drop high warning - breached pre-filters	Shutdown system and replace cartridge filters
			Above pressure drop high warning - fouled carbon	Inspect carbon for buildup of fine particulates, replace carbon as necessary
			Above pressure drop maximum - breached pre-filters	See breached filters above
			Above pressure drop maximum - fouled carbon	Shutdown system and replace carbon as necessary
C05	Post Carbon - Merucry Meter	Mercury Levels	Above warning limit (0.015 mg/m3)	Shutdown system, replace carbon
			Above maximum (0.3671 mg/m3)	Shutdown system, replace carbon
	Power Failure			System shuts down and must be manually restarted

MPAP Attachment C- Malfunction Cause and Detection Review: P10 Rip Oven and S12 Rip Oven Flue Stack

Sensor/Component - Condition	Description	Failure criteria	High or Low Warning Limit	Maximum or Minimum	Shutdown Procedure
VFD226	I-pass blower motor controller	Blower failure - mechanical	N/A	Reduced flow resulting in loss of negative pressure in flue stack, alarm at PIT2026, PLC initiates shutdown procedure.	Emergency Shutdown
		Blower failure - electrical	N/A	Reduced flow or immediate loss of flow resulting in loss of negative pressure in flue stack, alarm at PIT2026, PLC initiates shutdown procedure.	Emergency Shutdown
		VFD failure (reduced flow)	N/A	Reduced flow or immediate loss of flow resulting in loss of negative pressure in flue stack, alarm at PIT2026, PLC initiates shutdown procedure.	Emergency Shutdown
		VFD failure (increased flow)	N/A	Increased flow exceeding the upper limits of the sytem, alarm at PIT2026, PDT438 or PDT439, PLC initiates shutdown procedure.	Emergency Shutdown
T/C2414 - oven temperature exceedance	Oven temperature thermocouple	Burner control failure	N/A	Detected by burner control safety systems, alarm at line 1214, PLC initiates shutdown procedure.	Emergency Oven Shutdown
		Burning material inside Drum in oven	N/A	Detected by oven temperature controller, alarm at 1214, PLC initiates shutdown procedure.	Emergency Oven Shutdown
		Sensor Failure - loss of signal	N/A	Redundant thermocouples and hi-limit relays, alarm at line 1214, PLC initiates shutdown procedure.	Emergency Oven Shutdown
		Sensor failure - biased high	N/A	If biased high, actual temp will be below that recorded and will not present a safety hazard. If thermocouple exceeds upper limit will activate burner alarm, line 1214, PLC initiates shutdown procedure.	Emergency Oven Shutdown
		Sensor failure - biased low	N/A	Redundant thermocouples and hi-limit relays as component of burner safety systems, alarm at line 1214, PLC initiates shutdown procedure.	Emergency Oven Shutdown
PIT2132 - outside of low limit	Flue stack pressure	Restriction on carbon filter	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters when warning level is exceeded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Restriction of pre-filter	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters when warning level is exceeded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Restriction on I-pass heat exchanger	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters when warning level is exceeded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Fresh air blending damper stuck open	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters when warning level is exceeded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Icing/freeze up	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters when warning level is exceeded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		VFD failure	N/A	Detected by VFD126 controller, PLC will initiate shutdown procedure	Flue Stack Pressure Shutdown Procedures
		Blower failure - mechanical	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters when warning level is exceeded, unless the mechanical failure results in an electrical overlod condition.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Physical damage to exhaust duct or component allowing fresh air infiltration	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters when warning level is exceeded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Sensor Failure - loss of signal	Detected by PLC which initiates shutdown procedure	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Sensor failure - biased low	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters which will result in an increased pressure drop at other points in the system.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
PIT2132 - outside high limit	Flue stack pressure	Loss of carbon (reduced pressure drop between blower and oven flue stack)	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters which will result in an decreased pressure drop at other points in the system.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		VFD Failure	N/A	Detected by VFD126 controller, PLC will initiate shutdown procedure	Flue Stack Pressure Shutdown Procedures
		Failure of fresh air damper to open	Warning level exceedance recorded	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Sensor failure - biased high	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters which may result in an decreased pressure drop at other points in the system.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures

PDT512 outside of high limit	I-pass heat exchanger differential pressure	Debris buildup in I-pass	Warning level exceedance recorded. I-pass blower controller will compensate to maintain conditons within limits. Note, build up of solids will decrease efficiency and cause temperatures at RTD602 to increase. Procedures for RTD602 take precedence and the PLC may initiate shutdown procedures as specified for that sensor.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Icing/freezing	Warning level exceedance recorded. U-pass discharge blower controller will compensate to maintain I-pass discharge temperature above freezing. I-pass blower controller will also compensate to maintain conditons within limits. Note, build up of ice will cause a decrease in vacuum at PIT2026. Procedures for PIT2026 take precedence and PLC may initiate shutdown procedures as specified for that sensor.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased high	Warning level exceedance recorded. I-pass blower controller will compensate to maintain pressure drop within limits. Note, increased flow to compensate for a restriction that does not exist will result in an increase in the vacuum as measured at PIT2026 or an increase in the pressure drop at PT437, PT438 or PT439. The procedures outlined for these sensors take precedence and the PLC may initiate shutdown in accordance with those procedures.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
PDT512 outside of low limit	I-pass heat exchanger differential pressure	Fresh air infiltration	Warning level exceedance recorded. I-pass blower controller will compensate to maintain conditons within limits. Note, fresh air infiltration will cause a decrease in vacuum at PIT2026. Procedures for PIT2026 take precedence and the PLC may initiate shutdown procedures as specified for that sensor.	PLC will alarm and initiate shutdown	Send warning message. I-pass blower controlled by pressure in flue stack and temperature at pre-filter.
		Sensor failure - biased low	Warning level exceedance recorded. I-pass blower controller will compensate to maintain pressure drop within limits. Note, increased flow to compensate for a sensor reading below actual will result in an increase in the vacuum as measured at PIT2026 or an increase in the pressure drop at PT437, PT438 or PT439. The procedures outlined for these sensors take precedence and the PLC may initiate shutdown in accordance with those procedures.	PLC will alarm and initiate shutdown	Send warning message. I-pass blower controlled by pressure in flue stack and temperature at pre-filter.
		Increase in differential pressure across carbon and/or pre-filter(low dif)	Warning level exceedance recorded. I-pass blower controller will compensate to maintain pressure drop within limits. Note, a decrease in the pressure drop across the heat exchanger in this scenario will be preceded by an increase in the pressure drop across the carbon or the prefilter or will be reflected by a loss of vacuum at PIT2026. Those sensors take precedence and the PLC may initiate shutdown as specified for those sensors.	PLC will alarm and initiate shutdown	Send warning message. I-pass blower controlled by pressure in flue stack and temperature at pre-filter.
T/C811 - outside of high limit	I-pass heat exchanger discharge temperature	Buildup of material in heat exchanger	Warning level exceedance recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Failure of U-pass blower	N/A	PLC will alarm and initiate shutdown.	Emission Temperature Shutdown
		Oven over temp	N/A	Oven safety systems will alarm and PLC will initiate shutdown.	Emission Temperature Shutdown
		High ambient temperature reducing effectiveness of heat exchanger	Warning level exceedance recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature. If temperature is above at pre-filter fresh air damper will open and I-pass blower will increase to compensate.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Sensor Failure - biased high	Warning level exceedance recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature. If temperature is above at pre-filter fresh air damper will open and I-pass blower will increase to compensate.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
T/C811 - outside of low limit	I-pass heat exchanger discharge temperature	Low ambient temperature (potentially lead to icing of heat exchanger or freezing of drain lines)	Warning level exceedance recorded. U-pass discharge blower controller will compensate to maintain I-pass discharge temperature above freezing. I-pass blower controller will also compensate to maintain conditons within limits. Note icing may occur in other components increasing the pressure drop at thos points and may cause PLC to alarm and initiate shutdown as specified for those sensors.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Sensor failure - biased low	Warning level exceedance recorded. U-pass discharge blower controller will compensate to maintain I-pass discharge temperature above freezing. I-pass blower controller will also compensate to maintain conditons within limits. Note icing may occur in other components increasing the pressure drop at thos points and may cause PLC to alarm and initiate shutdown as specified for those sensors.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown

RTD706 - outside high limit	Pre-filter temperature sensor	Buildup of material in heat exchanger	Warning level exceedance recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature. If temperature is above at pre-filter fresh air damper will open and I-pass blower will increase to compensate.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Failure of U-pass blower	N/A	VFD105 will detect failure condition and PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		High ambient temperature reducing effectiveness of heat exchanger	Warning level exceedance recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature. If temperature is above at pre-filter fresh air damper will open and I-pass blower will increase to compensate.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Sensor failure - biased high	Warning level exceedance recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature. If temperature is above at pre-filter fresh air damper will open and I-pass blower will increase to compensate.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
RTD706 - outside low limit	Pre-filter temperature sensor	Low ambient temperature (potentially lead to icing of heat exchanger or freezing of drain lines)	Warning level exceedance recorded. U-pass blower controller will compensate to maintain I-pass discharge temperature above freezing. I-pass blower controller will also compensate to maintain condtions within limits. Note, if unable to compensate icing may occur in other components and anincrease in pressure drop may cause PLC to alarm and initiate shutdown.	PLC will alarm and initiate shutdown	N/A, see other components for shutdown criteria
		Sensor failure - biased low	Warning level exceedance recorded. U-pass blower controller will compensate to maintain I-pass discharge temperature above freezing. I-pass blower controller will also compensate to maintain condtions within limits. Note, if unable to compensate icing may occur in other components and anincrease in pressure drop may cause PLC to alarm and initiate shutdown.	PLC will alarm and initiate shutdown	N/A, see other components for shutdown criteria
DV516	Humidity Sensor	Sensor being used for monitoring purposes and not part of critical shutdown path at this time	N/A	N/A	N/A
PDT513 - outside high limit	Pre-filter differential pressure	Particulate buildup on filter	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Emission Temperature Shutdown
		Sensor Failure - loss of signal	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Emission Temperature Shutdown
PDT513 - outside low limit	Pre-filter differential pressure	Structural failure of filter	Warning level exceedance recorded. I-pass blower controller will increase flow to compensate and PLC will adjust other components accordingly.	PLC will alarm and iniate shutdown	Flue Stack Pressure Shutdown
		Restriction at heat exchanger	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Flue Stack Pressure Shutdown
		Restriction on carbon	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Flue Stack Pressure Shutdown
		Low flow condition	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Flue Stack Pressure Shutdown
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Flue Stack Pressure Shutdown
DV841	Fresh air damper controller	Failure to open	N/A	Will cause temperature increase at RTD627 and PLC will alarm for high temperature and initiate shutdown as specified for RTD627.	N/A, see other components for shutdown criteria
		Failure to close via actuator	N/A	I-pass blower controller will compensate to maintain negative pressure at PIT2026. If negative pressure cannot be maintained at PIT2026 PLC will alarm and initiate shutdown as specified for PIT2026 outside low limit.	See PIT2026 for emergency shutdown procedures
RTD731 - outside upper limit	Carbon differential temperature	Excess moisture causing carbon to absorb oxygen from air	Warning level exceedance recorded. Fresh air damper to open and I-pass blower controller will compensate to maintain system within operating parameters.	PLC will alarm and iniate shutdown	Emergency Oven Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased high	Warning level exceedance recorded. Fresh air damper to open and I-pass blower controller will compensate to maintain system within operating parameters.	PLC will alarm and iniate shutdown	Emergency Oven Shutdown
PDT514 - outside upper limit	Carbon differential pressure	Failure of pre-filter causing buildup of particulate matter restricting flow	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Buildup of fine particulate matter not captured by pre-filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
PDT514 - outside lower limit - at normal or increased flow	Carbon differential pressure	Lose of carbon from filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown
		Channelling of air flow through carbon	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown

		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown
PDT515 - outside high limit	U-pass pre-filter differential pressure	Particulate buildup on filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
PDT515 - outside low limit	U-pass pre-filter differential pressure	Structural failure of filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Restriction at heat exchanger	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Low flow condition	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Icing/freezing	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
VFD U-pass controller	U-pass blower motor controller	Blower failure - mechanical	N/A	Will result in a temperature exceedance at the discharge from the I-pass or at the pre-filter and shutdown will follow the procedures for those sensors.	See RTD602 and RTD606
		Blower failure - electrical	N/A	Detected by VFD105, PLC will alarm based on I-pass temperature and initiate shutdown.	Emergency Oven Shutdown
		VFD failure	N/A	Detected by VFD105, PLC will alarm based on I-pass temperature and initiate shutdown.	Emergency Oven Shutdown
PIT2130 - outside lower limit	Vacuum Header Sensor	Pipe Failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Loss of vacuum at Drum	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Vacuum blower failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Excess generation of steam/vapors	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Pyrolysis of organics	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Combustion of contents	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2130 - outside upper limit		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Mechanical problem	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2134 - outside lower limit	Drum Vacuum Sensor 1	Pipe Failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Loss of vacuum at Drum	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Vacuum blower failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Excess generation of steam/vapors	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Pyrolysis of organics	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Combustion of contents	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2134 - outside upper limit		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Mechanical problem	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2136 - outside lower limit	Drum Vacuum Sensor 2	Pipe Failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Loss of vacuum at Drum	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Vacuum blower failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Excess generation of steam/vapors	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Pyrolysis of organics	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Combustion of contents	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2136 - outside upper limit		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Mechanical problem	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2138 - outside lower limit	Drum Vacuum Sensor 3	Pipe Failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Loss of vacuum at Drum	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Vacuum blower failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Excess generation of steam/vapors	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Pyrolysis of organics	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Combustion of contents	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2138 - outside upper limit		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Mechanical problem	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2140 - outside lower limit	Drum Vacuum Sensor 4	Pipe Failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure

		Loss of vacuum at Drum	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Vacuum blower failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Excess generation of steam/vapors	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Pyrolysis of organics	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Combustion of contents	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2140 - outside upper limit		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Mechanical problem	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
T/C2435 - outside upper limit	Temperature (Condenser Ejector)	Clogged water recirculation filters	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Chiller failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Coolant recirculation failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
T/C2435 - outside lower limit	Temperature (Condenser Ejector)	Chiller controller failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
PIT2207 - outside upper limit	Carbon differential pressure	Failure of pre-filter causing buildup of particulate matter restricting flow	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Buildup of fine particulate matter not captured by pre-filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
PIT2207 - outside lower limit	Carbon differential pressure	Lose of carbon from filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Channelling of air flow through carbon	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown

Sensor/Component - Condition	Description	Failure criteria	High or Low Warning Limit	Maximum or Minimum	Shutdown Procedure
VFD202	I-pass blower motor controller	Blower failure - mechanical	N/A	Reduced flow resulting in loss of negative pressure in flue stack, alarm at PIT2026, PLC initiates shutdown procedure.	Emergency Shutdown
		Blower failure - electrical	N/A	Reduced flow or immediate loss of flow resulting in loss of negative pressure in flue stack, alarm at PIT2026, PLC initiates shutdown procedure.	Emergency Shutdown
		VFD failure (reduced flow)	N/A	Reduced flow or immediate loss of flow resulting in loss of negative pressure in flue stack, alarm at PIT2026, PLC initiates shutdown procedure.	Emergency Shutdown
		VFD failure (increased flow)	N/A	Increased flow exceeding the upper limits of the sytem, alarm at PIT2026, PDT438 or PDT439, PLC initiates shutdown procedure.	Emergency Shutdown
T/C2410 - oven temperature exceedance	Oven temperature thermocouple	Burner control failure	N/A	Detected by burner control safety systems, alarm at line 1214, PLC initiates shutdown procedure.	Emergency Oven Shutdown
		Burning material inside Drum in oven	N/A	Detected by oven temperature controller, alarm at 1214, PLC initiates shutdown procedure.	Emergency Oven Shutdown
		Sensor Failure - loss of signal	N/A	Redundant thermocouples and hi-limit relays, alarm at line 1214, PLC initiates shutdown procedure.	Emergency Oven Shutdown
		Sensor failure - biased high	N/A	If biased high, actual temp will be below that recorded and will not present a safety hazard. If thermocouple exceeds upper limit will activate burner alarm, line 1214, PLC initiates shutdown procedure.	Emergency Oven Shutdown
		Sensor failure - biased low	N/A	Redundant thermocouples and hi-limit relays as component of burner safety systems, alarm at line 1214, PLC initiates shutdown procedure.	Emergency Oven Shutdown
PIT2109 - outside of low limit	Flue stack pressure	Restriction on carbon filter	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters when warning level is exceeded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Restriction of pre-filter	Warning level exceedance recorded.I-pass blower controller will compensate to maintain conditions within operating parameters when warning level is exceeded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Restriction on I-pass heat exchanger	Warning level exceedance recorded.I-pass blower controller will compensate to maintain conditions within operating parameters when warning level is exceeded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Fresh air blending damper stuck open	Warning level exceedance recorded.I-pass blower controller will compensate to maintain condtions within operating parameters when warning level is exceeded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Icing/freeze up	Warning level exceedance recorded.I-pass blower controller will compensate to maintain conditions within operating parameters when warning level is exceeded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		VFD failure	N/A	Detected by VFD126 controller, PLC will initiate shutdown procedure	Flue Stack Pressure Shutdown Procedures
		Blower failure - mechanical	Warning level exceedance recorded.I-pass blower controller will compensate to maintain conditions within operating parameters when warning level is exceeded, unless the mechanical failure results in an electrical overlod condition.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Physical damage to exhaust duct or component allowing fresh air infiltration	Warning level exceedance recorded.I-pass blower controller will compensate to maintain conditions within operating parameters when warning level is exceeded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Sensor failure - biased low	Warning level exceedance recorded.I-pass blower controller will compensate to maintain condtions within operating parameters which will result in an increased pressure drop at other points in the system.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
PIT2109 - outside high limit	Flue stack pressure	Loss of carbon (reduced pressure drop between blower and oven flue stack)	Warning level exceedance recorded.I-pass blower controller will compensate to maintain conditions within operating parameters which will result in an decreased pressure drop at other points in the system.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		VFD Failure	N/A	Detected by VFD126 controller, PLC will initiate shutdown procedure	Flue Stack Pressure Shutdown Procedures
		Failure of fresh air damper to open	Warning level exceedance recorded	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Sensor failure - biased high	Warning level exceedance recorded. I-pass blower controller will compensate to maintain conditions within operating parameters which may result in an decreased pressure drop at other points in the system.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
PDT501 outside of high limit	I-pass heat exchanger differential pressure	Debris buildup in I-pass	Warning level exceedance will be recorded. I-pass blower controller will compensate to maintain condtions within limits. Note, build up of solids will decrease efficiency and cause temperatures at RTD602 to increase. Procedures for RTD602 take precedence and the PLC may initiate shutdown procedures as specified for that sensor.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures

		Icing/freezing	Warning level exceedance will be recorded. U-pass discharge blower controller will compensate to maintain I-pass discharge temperature above freezing. I-pass blower controller will also compensate to maintain conditons within limits. Note, build up of ice will cause a decrease in vacuum at PIT2026. Procedures for PIT2026 take precedence and PLC may initiate shutdown procedures as specified for that sensor.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Sensor failure - biased high	Warning level exceedance will be recorded. I-pass blower controller will compensate to maintain pressure drop within limits. Note, increased flow to compensate for a restriction that does not exist will result in an increase in the vacuum as measured at PIT2026 or an increase in the pressure drop at PT437, PT438 or PT439. The procedures outlined for these sensors take precedence and the PLC may initiate shutdown in accordance with those procedures.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
PDT501 outside of low limit	I-pass heat exchanger differential pressure	Fresh air infiltration	Warning level exceedance will be recorded. I-pass blower controller will compensate to maintain conditons within limits. Note, fresh air infiltration will cause a decrease in vacuum at PIT2026. Procedures for PIT2026 take precedence and the PLC may initiate shutdown procedures as specified for that sensor.	PLC will alarm and initiate shutdown	Send warning message. I-pass blower controlled by pressure in flue stack and temperature at pre-filter.
		Sensor failure - biased low	Warning level exceedance will be recorded. I-pass blower controller will compensate to maintain pressure drop within limits. Note, increased flow to compensate for a sensor reading below actual will result in an increase in the vacuum as measured at PIT2026 or an increase in the pressure drop at PT437, PT438 or PT439. The procedures outlined for these sensors take precedence and the PLC may initiate shutdown in accordance with those procedures.	PLC will alarm and initiate shutdown	Send warning message. I-pass blower controlled by pressure in flue stack and temperature at pre-filter.
		Increase in differential pressure across carbon and/or pre-filter(low dif)	Warning level exceedance will be recorded. I-pass blower controller will compensate to maintain pressure drop within limits. Note, a decrease in the pressure drop across the heat exchanger in this scenario will be preceded by an increase in the pressure drop across the carbon or the prefilter or will be reflected by a loss of vacuum at PIT2026. Those sensors take precedence and the PLC may initiate shutdown as specified for those sensors.	PLC will alarm and initiate shutdown	Send warning message. I-pass blower controlled by pressure in flue stack and temperature at pre-filter.
T/C805 - outside of high limit	I-pass heat exchanger discharge temperature	Buildup of material in heat exchanger	Warning level exceedance will be recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Failure of U-pass blower	N/A	PLC will alarm and initiate shutdown.	Emission Temperature Shutdown
		Oven over temp	N/A	Oven safety systems will alarm and PLC will initiate shutdown.	Emission Temperature Shutdown
		High ambient temperature reducing effectiveness of heat exchanger	Warning level exceedance will be recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature. If temperature is above at pre-filter fresh air damper will open and I-pass blower will increase to compensate.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
T/C805 - outside of low limit	I-pass heat exchanger discharge temperature	Sensor Failure - biased high	Warning level exceedance will be recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature. If temperature is above at pre-filter fresh air damper will open and I-pass blower will increase to compensate.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Low ambient temperature (potentially lead to icing of heat exchanger or freezing of drain lines)	Warning level exceedance will be recorded. U-pass discharge blower controller will compensate to maintain I-pass discharge temperature above freezing. I-pass blower controller will also compensate to maintain conditons within limits. Note icing may occur in other components increasing the pressure drop at thos points and may cause PLC to alarm and initiate shutdown as specified for those sensors.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Sensor failure - biased low	Warning level exceedance will be recorded. U-pass discharge blower controller will compensate to maintain I-pass discharge temperature above freezing. I-pass blower controller will also compensate to maintain conditons within limits. Note icing may occur in other components increasing the pressure drop at thos points and may cause PLC to alarm and initiate shutdown as specified for those sensors.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
RTD641 - outside high limit	Pre-filter temperature sensor	Buildup of material in heat exchanger	Warning level exceedance will be recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature. If temperature is above at pre-filter fresh air damper will open and I-pass blower will increase to compensate.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Failure of U-pass blower	N/A	VFD105 will detect failure condition and PLC will alarm and initiate shutdown	Emission Temperature Shutdown

RTD641 - outside low limit	Pre-filter temperature sensor	High ambient temperature reducing effectiveness of heat exchanger	Warning level exceedance will be recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature. If temperature is above at pre-filter fresh air damper will open and I-pass blower will increase to compensate.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Sensor failure - biased high	Warning level exceedance will be recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature. If temperature is above at pre-filter fresh air damper will open and I-pass blower will increase to compensate.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
RTD641 - outside low limit	Pre-filter temperature sensor	Low ambient temperature (potentially lead to icing of heat exchanger or freezing of drain lines)	Warning level exceedance will be recorded. U-pass blower controller will compensate to maintain I-pass discharge temperature above freezing. I-pass blower controller will also compensate to maintain condtions within limits. Note, if unable to compensate icing may occur in other components and anincrease in pressure drop may cause PLC to alarm and initiate shutdown.	PLC will alarm and initiate shutdown	N/A, see other components for shutdown criteria
		Sensor failure - biased low	Warning level exceedance will be recorded. U-pass blower controller will compensate to maintain I-pass discharge temperature above freezing. I-pass blower controller will also compensate to maintain condtions within limits. Note, if unable to compensate icing may occur in other components and anincrease in pressure drop may cause PLC to alarm and initiate shutdown.	PLC will alarm and initiate shutdown	N/A, see other components for shutdown criteria
DV505	Humidity Sensor	Sensor being used for monitoring purposes and not part of critical shutdown path at this time	N/A	N/A	N/A
PDT502 - outside high limit	Pre-filter differential pressure	Particulate buildup on filter Sensor Failure - loss of signal Sensor failure - biased high	Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded.	PLC will alarm and iniate shutdown PLC will alarm and initiate shutdown PLC will alarm and iniate shutdown	Emission Temperature Shutdown Emission Temperature Shutdown Emission Temperature Shutdown
PDT502 - outside low limit	Pre-filter differential pressure	Structural failure of filter	I-pass blower controller will increase flow to compensate and PLC will adjust other components accordingly.	PLC will alarm and iniate shutdown	Flue Stack Pressure Shutdown
		Restriction at heat exchanger	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Flue Stack Pressure Shutdown
		Restriction on carbon	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Flue Stack Pressure Shutdown
		Low flow condition	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Flue Stack Pressure Shutdown
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Flue Stack Pressure Shutdown
DV839	Fresh air damper controller	Failure to open	N/A	Will cause temperature increase at RTD627 and PLC will alarm for high temperature and initiate shutdown as specified for RTD627.	N/A, see other components for shutdown criteria
		Failure to close via actuator	N/A	I-pass blower controller will compensate to maintain negative pressure at PIT2026. If negative pressure cannot be maintained at PIT2026 PLC will alarm and initiate shutdown as specified for PIT2026 outside low limit.	See PIT2026 for emergency shutdown procedures
RTD737 - outside upper limit	Carbon differential temperature	Excess moisture causing carbon to absorb oxygen from air	Warning level exceedance recorded. Fresh air damper to open and I-pass blower controller will compensate to maintain system within operating parameters.	PLC will alarm and iniate shutdown	Emergency Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased high	Warning level exceedance recorded. Fresh air damper to open and I-pass blower controller will compensate to maintain system within operating parameters.	PLC will alarm and iniate shutdown	Emergency Shutdown
PDT503 - outside upper limit	Carbon differential pressure	Failure of pre-filter causing buildup of particulate matter restricting flow	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Shutdown
		Buildup of fine particulate matter not captured by pre-filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emergency Shutdown
		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Shutdown
PDT503 - outside lower limit - at normal or increased flow	Carbon differential pressure	Lose of carbon from filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown
		Channelling of air flow through carbon	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown
PDT504 - outside high limit	U-pass pre-filter differential presssure	Particulate buildup on pre-filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
PDT504 - outside low limit	U-pass pre-filter differential pressure	Structural failure of filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Restriction at heat exchanger	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown

		Low flow condition Sensor failure - biased low Icing/freezing	Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded.	PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown	Emergency Oven Shutdown Emergency Oven Shutdown Emergency Oven Shutdown
VFD U-pass controller	U-pass blower motor controller	Blower failure - mechanical	N/A	Will result in a temperature exceedance at the discharge from the I-pass or at the pre-filter and shutdown will follow the procedures for those sensors.	See RTD602 and RTD606
		Blower failure - electrical	N/A	Detected by VFD105, PLC will alarm based on I-pass temperature and initiate shutdown.	Emergency Oven Shutdown
		VFD failure	N/A	Detected by VFD105, PLC will alarm based on I-pass temperature and initiate shutdown.	Emergency Oven Shutdown
PIT2130 - outside lower limit	Vacuum Header Sensor	Pipe Failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Loss of vacuum at Drum	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Vacuum blower failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Excess generation of steam/vapors	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Pyrolysis of organics	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Combustion of contents	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2130 - outside upper limit		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Mechanical problem	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2111 - outside lower limit	Drum Vacuum Sensor 1 Kettle Vacuum Sensor	Pipe Failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Loss of vacuum at Drum	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Vacuum blower failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Excess generation of steam/vapors	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Pyrolysis of organics	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Combustion of contents	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2111 - outside upper limit		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Mechanical problem	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2113 - outside lower limit	Drum Vacuum Sensor 2	Pipe Failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Loss of vacuum at Drum	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Vacuum blower failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Excess generation of steam/vapors	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Pyrolysis of organics	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Combustion of contents	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2113 - outside upper limit		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Mechanical problem	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2115 - outside lower limit	Drum Vacuum Sensor 3	Pipe Failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Loss of vacuum at Drum	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Vacuum blower failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Excess generation of steam/vapors	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Pyrolysis of organics	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Combustion of contents	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2115 - outside upper limit		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Mechanical problem	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2117 - outside lower limit	Drum Vacuum Sensor 4	Pipe Failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Loss of vacuum at Drum	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Vacuum blower failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Excess generation of steam/vapors	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Pyrolysis of organics	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Combustion of contents	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2117 - outside upper limit		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Mechanical problem	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2126 - outside lower limit	Drum Vacuum Sensor 5	Pipe Failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure

PIT2126 - outside upper limit		Loss of vacuum at Drum	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Vacuum blower failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Excess generation of steam/vapors	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Pyrolysis of organics	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Combustion of contents	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2126 - outside upper limit		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Mechanical problem	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2128 - outside lower limit	Drum Vacuum Sensor 6	Pipe Failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Loss of vacuum at Drum	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Vacuum blower failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Excess generation of steam/vapors	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Pyrolysis of organics	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Combustion of contents	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2128 - outside upper limit		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Mechanical problem	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
T/C2433 - outside upper limit	Temperature (Condenser Ejector)	Clogged water recirculation filters	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Chiller failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Coolant recirculation failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
T/C2433 - outside lower limit	Temperature (Condenser Ejector)	Chiller controller failure	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
PIT2207 - outside upper limit	Carbon differential pressure	Failure of pre-filter causing buildup of particulate matter restricting flow	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Buildup of fine particulate matter not captured by pre-filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
PIT2207 - outside lower limit	Carbon differential pressure	Lose of carbon from filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Channelling of air flow through carbon	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown

Sensor/Component - Condition	Description	Failure criteria	Response Activity
Pre-filter Magnehilc	Pressure drop across filter	Below pressure drop - breach of pre-filter	Replace filters
		Below pressure drop - due to high pressure drop across carbon	See fouled carbon below
		Above pressure drop high warning - fouled filters	Replace filters
		Above pressure drop high warning - due to low pressure drop across carbon	See carbon by-pass below
		Above pressure drop maximum - fouled filters	Replace filters
		Above pressure drop maximum - due to low pressure drop across carbon	See carbon by-pass below
Carbon Magnehelic	Pressure drop across carbon	Below pressure drop minimum - due to fouled pre-filters	See fouled filters above
		Below pressure drop - due to air flow bypassing carbon bed	Initiate High Hg Level Shutdown
		Above pressure drop high warning - breached pre-filters	See breached filters above
		Above pressure drop high warning - fouled carbon	Initiate low flow shutdown
		Above pressure drop maximum - breached pre-filters	See breached filters above
		Above pressure drop maximum - fouled carbon	Initiate low flow shutdown
Post Carbon - Merucry Meter	Mercury Levels	Above warning limits	Investigate cause
		Above maximum	Initiate High Hg Shutdown
Power Failure			Power Failure procedures

Sensor/Component - Condition	Description	Failure criteria	High or Low Warning Limit	Maximum or Minimum	Shutdown Procedure
VFD126	I-pass blower motor controller	Blower failure - mechanical	N/A	Reduced flow resulting in loss of negative pressure in flue stack, alarm at PIT2026, PLC initiates shutdown procedure.	Emergency Shutdown
		Blower failure - electrical	N/A	Reduced flow or immediate loss of flow resulting in loss of negative pressure in flue stack, alarm at PIT2026, PLC initiates shutdown procedure.	Emergency Shutdown
		VFD failure (reduced flow)	N/A	Reduced flow or immediate loss of flow resulting in loss of negative pressure in flue stack, alarm at PIT2026, PLC initiates shutdown procedure.	Emergency Shutdown
		VFD failure (increased flow)	N/A	Increased flow exceeding the upper limits of the sytem, alarm at PIT2026, PDT438 or PDT439, PLC initiates shutdown procedure.	Emergency Shutdown
T/C2402 - oven temperature exceedance	Oven temperature thermocouple	Burner control failure	N/A	Detected by burner control safety systems, alarm at line 1214, PLC initiates shutdown procedure.	Emergency Oven Shutdown
		Burning material inside Drum in oven	N/A	Detected by oven temperature controller, alarm at 1214, PLC initiates shutdown procedure.	Emergency Oven Shutdown
		Sensor Failure - loss of signal	N/A	Redundant thermocouples and hi-limit relays, alarm at line 1214, PLC initiates shutdown procedure.	Emergency Oven Shutdown
		Sensor failure - biased high	N/A	If biased high, actual temp will be below that recorded and will not present a safety hazard. If thermocouple exceeds upper limit will activate burner alarm, line 1214, PLC initiates shutdown procedure.	Emergency Oven Shutdown
		Sensor failure - biased low	N/A	Redundant thermocouples and hi-limit relays as component of burner safety systems, alarm at line 1214, PLC initiates shutdown procedure.	Emergency Oven Shutdown
PIT2026 - outside of low limit	Flue stack pressure	Restriction on carbon filter	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Restriction of pre-filter	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Restriction on I-pass heat exchanger	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Fresh air blending damper stuck open	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Icing/freeze up	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		VFD failure	N/A	Detected by VFD126 controller, PLC will initiate shutdown procedure	Flue Stack Pressure Shutdown Procedures
		Blower failure - mechanical	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Physical damage to exhaust duct or component allowing fresh air infiltration	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
PIT2026 - outside high limit	Flue stack pressure	Sensor failure - biased low	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Loss of carbon (reduced pressure drop between blower and oven flue stack)	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters. Note, reduced flow may result in an decreased pressure drop at other points in the system.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		VFD Failure	N/A	Detected by VFD126 controller, PLC will initiate shutdown procedure	Emergency Shutdown
		Failure of fresh air damper to open (high temp increase in flow)	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters. Note, reduced flow may result in an decreased pressure drop at other points in the system.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
		Sensor failure - biased high	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within operating parameters. Note, reduced flow may result in an decreased pressure drop at other points in the system.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown Procedures
PT436 - outside of high limit	I-pass heat exchanger differential pressure	Solids buildup in I-pass	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within limits. Note, build up of solids will decrease efficiency and cause temperatures at RTD602 to increase. Procedures for RTD602 take precedence and the PLC may initiate shutdown procedures as specified for that sensor.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown

		Icing/freezing	Warning level exceedance recorded. U-pass discharge blower controller will compensate to maintain I-pass discharge temperature above freezing. I-pass blower controller will also compensate to maintain condtions within limits. Note, build up of ice will cause a decrease in vacuum at PIT2026. Procedures for PIT2026 take precedence and PLC may initiate shutdown procedures as specified for that sensor.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased high	Warning level exceedance recorded. I-pass blower controller will compensate to maintain pressure drop within limits. Note, increased flow to compensate for a restriction that does not exist will result in an increase in the vacuum as measured at PIT2026 or an increase in the pressure drop at PT437, PT438 or PT439. The procedures outlined for these sensors take precedence and the PLC may initiate shutdown in accordance with those procedures.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
PT436 - outside of low limit	I-pass heat exchanger differential pressure	Fresh air infiltration	Warning level exceedance recorded. I-pass blower controller will compensate to maintain condtions within limits. Note, fresh air infiltration will cause a decrease in vacuum at PIT2026. Procedures for PIT2026 take precedence and the PLC may initiate shutdown procedures as specified for that sensor.	PLC will alarm and initiate shutdown	Send warning message. I-pass blower controlled by pressure in flue stack and temperature at pre-filter.
		Sensor failure - biased low	Warning level exceedance recorded. I-pass blower controller will compensate to maintain pressure drop within limits. Note, increased flow to compensate for a sensor reading below actual will result in an increase in the vacuum as measured at PIT2026 or an increase in the pressure drop at PT437, PT438 or PT439. The procedures outlined for these sensors take precedence and the PLC may initiate shutdown in accordance with those procedures.	PLC will alarm and initiate shutdown	Send warning message. I-pass blower controlled by pressure in flue stack and temperature at pre-filter.
		Increase in differential pressure across carbon and/or pre-filter(low dif)	Warning level exceedance recorded. I-pass blower controller will compensate to maintain pressure drop within limits. Note, a decrease in the pressure drop across the heat exchanger in this scenario will be preceded by an increase in the pressure drop across the carbon or the prefilter or will be reflected by a loss of vacuum at PIT2026. Those sensors take precedence and the PLC may initiate shutdown as specified for those sensors.	PLC will alarm and initiate shutdown	Send warning message. I-pass blower controlled by pressure in flue stack and temperature at pre-filter.
T/C803 - outside of high limit	I-pass heat exchanger discharge temperature	Buildup of material in heat exchanger	Warning level exceedance recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Failure of U-pass blower	N/A	PLC will alarm and initiate shutdown.	Emission Temperature Shutdown
		Oven over temp	N/A	Oven safety systems will alarm and PLC will initiate shutdown.	Emission Temperature Shutdown
		High ambient temperature reducing effectiveness of heat exchanger	Warning level exceedance recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature. If temperature is above at pre-filter fresh air damper will open and I-pass blower will increase to compensate.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
T/C803 - outside of low limit	I-pass heat exchanger discharge temperature	Sensor Failure - biased high	Warning level exceedance recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature. If temperature is above at pre-filter fresh air damper will open and I-pass blower will increase to compensate.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Low ambient temperature (potentially lead to icing of heat exchanger or freezing of drain lines)	Warning level exceedance recorded. U-pass discharge blower controller will compensate to maintain I-pass discharge temperature above freezing. I-pass blower controller will also compensate to maintain condtions within limits. Note icing may occur in other components increasing the pressure drop at thos points and may cause PLC to alarm and initiate shutdown as specified for those sensors.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Sensor failure - biased low	Warning level exceedance recorded. U-pass discharge blower controller will compensate to maintain I-pass discharge temperature above freezing. I-pass blower controller will also compensate to maintain condtions within limits. Note icing may occur in other components increasing the pressure drop at thos points and may cause PLC to alarm and initiate shutdown as specified for those sensors.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
RTD627 - outside high limit	Pre-filter temperature sensor	Buildup of material in heat exchanger	Warning level exceedance recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature. If temperature is above at pre-filter fresh air damper will open and I-pass blower will increase to compensate.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Failure of U-pass blower	N/A	VFD105 will detect failure condition and PLC will alarm and initiate shutdown	Emission Temperature Shutdown

RTD627 - outside low limit	Pre-filter temperature sensor	High ambient temperature reducing effectiveness of heat exchanger	Warning level exceedance recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature. If temperature is above at pre-filter fresh air damper will open and I-pass blower will increase to compensate.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Sensor failure - biased high	Warning level exceedance recorded. U-pass blower controller will increase flow through U-pass to compensate for elevated temeprature. If temperature is above at pre-filter fresh air damper will open and I-pass blower will increase to compensate.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Low ambient temperature (potentially lead to icing of heat exchanger or freezing of drain lines)	Warning level exceedance recorded. U-pass blower controller will compensate to maintain I-pass discharge temperature above freezing. I-pass blower controller will also compensate to maintain condntions within limits. Note, if unable to compensate icing may occur in other components and anincrease in pressure drop may cause PLC to alarm and initiate shutdown.	PLC will alarm and initiate shutdown	N/A, see other components for shutdown criteria
		Sensor failure - biased low	Warning level exceedance recorded. U-pass blower controller will compensate to maintain I-pass discharge temperature above freezing. I-pass blower controller will also compensate to maintain condntions within limits. Note, if unable to compensate icing may occur in other components and anincrease in pressure drop may cause PLC to alarm and initiate shutdown.	PLC will alarm and initiate shutdown	N/A, see other components for shutdown criteria
DV441	Humidity Sensor	Sensor being used for monitoring purposes and not part of critical shutdown path at this time	N/A	N/A	N/A
PDT437 - outside high limit	Pre-filter differential pressure	Particulate buildup on filter	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Emission Temperature Shutdown
		Sensor Failure - loss of signal	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emission Temperature Shutdown
		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Emission Temperature Shutdown
PDT437 - outside low limit	Pre-filter differential pressure	Structural failure of filter allowing air infiltration	Warning level exceedance recorded. I-pass blower controller will increase flow to compensate and PLC will adjust other components accordingly.	PLC will alarm and iniate shutdown	Flue Stack Pressure Shutdown
		Restriction at heat exchanger	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Flue Stack Pressure Shutdown
		Restriction on carbon	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Flue Stack Pressure Shutdown
		Low flow condition	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Flue Stack Pressure Shutdown
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Flue Stack Pressure Shutdown
DV837	Fresh air damper controller	Failure to open	N/A	Will cause temperature increase at RTD627 and PLC will alarm for high temperature and initiate shutdown as specified for RTD627.	N/A, see other components for shutdown criteria
		Failure to close via actuator	N/A	I-pass blower controller will compensate to maintain negative pressure at PIT2026. If negative pressure cannot be maintained at PIT2026 PLC will alarm and initiate shutdown as specified for PIT2026 outside low limit.	See PIT2026 for emergency shutdown procedures
RTD716 - outside upper limit	Carbon differential temperature	Excess moisture causing carbon to absorb oxygen from air	Warning level exceedance recorded. Fresh air damper to open and I-pass blower controller will compensate to maintain system within operating parameters.	PLC will alarm and iniate shutdown	Emergency Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emergency Shutdown
		Sensor failure - biased high	Warning level exceedance recorded. Fresh air damper to open and I-pass blower controller will compensate to maintain system within operating parameters.	PLC will alarm and iniate shutdown	Emergency Shutdown
RTD727 - outside upper limit	Carbon differential temperature	Excess moisture causing carbon to absorb oxygen from air	Warning level exceedance recorded. Fresh air damper to open and I-pass blower controller will compensate to maintain system within operating parameters.	PLC will alarm and iniate shutdown	Emergency Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emergency Shutdown
		Sensor failure - biased high	Warning level exceedance recorded. Fresh air damper to open and I-pass blower controller will compensate to maintain system within operating parameters.	PLC will alarm and iniate shutdown	Emergency Shutdown
RTD727 - outside lower limit	Carbon differential temperature	Drawing cool/dry air could cause carbon to lose moisture and cool	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Emergency Oven Shutdown
		Low ambient temperatures could cause cooling of exhaust gases to be read as a decrease in carbon temperature	Warning level exceedance recorded.	PLC will alarm and iniate shutdown	Emergency Oven Shutdown

		Sensor failure - biased low	Warning level exceedance recorded. Will be indicated by a discrepancy in temperature from the reading on carbon unit 2 with no accompanying discrepancy in pressure drop indicating even flow between the two carbon units. No further action based on this sensor.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
PDT438 - outside upper limit	Carbon differential pressure	Failure/rupture of pre-filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Buildup of fine particulate matter not captured by pre-filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
PDT438 - outside lower limit - at normal or increased flow	Carbon differential pressure	Lose of carbon from filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown
		Channelling of air flow through carbon	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown
PDT439 - outside upper limit	Carbon differential pressure	Failure/rupture of pre-filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Buildup of fine particulate matter not captured by pre-filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
PDT439 - outside lower limit - at normal or increased flow	Carbon differential pressure	Lose of carbon from filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown
		Channelling of air flow through carbon	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Flue Stack Pressure Shutdown
PDT440 - outside high limit	U-pass pre-filter differential pressure	Particulate buildup on filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased high	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
PDT440 - outside low limit	U-pass pre-filter differential pressure	Structural failure of filter	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Restriction at heat exchanger	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Low flow condition	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor Failure - loss of signal	N/A	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
		Sensor failure - biased low	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Emergency Oven Shutdown
VFD U-pass controller	U-pass blower motor controller	Blower failure - mechanical	N/A	Will result in a temperature exceedance at the discharge from the I-pass or at the pre-filter and shutdown will follow the procedures for those sensors.	See RTD602 and RTD606
		Blower failure - electrical	N/A	Detected by VFD105, PLC will alarm based on I-pass temperature and initiate shutdown.	Emergency Oven Shutdown
		VFD failure	N/A	Detected by VFD105, PLC will alarm based on I-pass temperature and initiate shutdown.	Emergency Oven Shutdown
PIT2028 - outside lower limit	Vacuum Header Sensor	Pipe Failure	Warning level exceedance recoded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Loss of vacuum at Drum	Warning level exceedance recoded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Vacuum blower failure	Warning level exceedance recoded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Excess generation of steam/vapors	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Pyrolysis of organics	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Combustion of contents	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - loss of signal	Warning level exceedance recoded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Sensor failure - biased low	Warning level exceedance recoded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2028 - outside upper limit	Vacuum Header Sensor	Sensor failure - biased high	Warning level exceedance recoded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Mechanical problem	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
PIT2030 - outside lower limit	Drum Vacuum Sensor 1 Kettle 1 sensor	Pipe Failure	Warning level exceedance recoded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Loss of vacuum at Drum	Warning level exceedance recoded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Vacuum blower failure	Warning level exceedance recoded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Excess generation of steam/vapors	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Pyrolysis of organics	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure
		Combustion of contents	Warning level exceedance recorded.	PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure

		Excess generation of steam/vapors Pyrolysis of organics Combustion of contents Sensor failure - loss of signal Sensor failure - biased low	Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded.	PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure
PIT2028 - outside upper limit	Drum Vacuum Sensor 7 Kettle 3 sensor	Sensor failure - biased high Mechanical problem	Warning level exceedance recorded. Warning level exceedance recorded.	PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure
PIT2105 - outside lower limit	Drum Vacuum Sensor 8	Pipe Failure Loss of vacuum at Drum Vacuum blower failure Excess generation of steam/vapors Pyrolysis of organics Combustion of contents Sensor failure - loss of signal Sensor failure - biased low	Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded.	PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure
PIT2028 - outside upper limit	Drum Vacuum Sensor 8	Sensor failure - biased high Mechanical problem	Warning level exceedance recorded. Warning level exceedance recorded.	PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure
PIT2107 - outside lower limit	Drum Vacuum Sensor 9 Kettle sensor	Pipe Failure Loss of vacuum at Drum Vacuum blower failure Excess generation of steam/vapors Pyrolysis of organics Combustion of contents Sensor failure - loss of signal Sensor failure - biased low	Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded.	PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure
PIT2028 - outside upper limit	Drum Vacuum Sensor 9 Kettle sensor	Sensor failure - biased high Mechanical problem	Warning level exceedance recorded. Warning level exceedance recorded.	PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown	Vacuum Failure Shutdown Procedure Vacuum Failure Shutdown Procedure
T/C2429 - outside upper limit	Temperature (Condenser 1 vapor discharge)	Condensate buildup on interior surfaces (reduced heat exchange) Chiller failure Coolant recirculation failure Sensor failure - biased high	Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded.	PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown	Emergency Oven Shutdown Emergency Oven Shutdown Emergency Oven Shutdown Emergency Oven Shutdown
T/C2429 - outside lower limit	Temperature (Condenser 1 vapor discharge)	Chiller controller failure Sensor failure - biased low	Warning level exceedance recorded. Warning level exceedance recorded.	PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown	Emergency Oven Shutdown Emergency Oven Shutdown
T/C2431 - outside upper limit	Temperature (Condenser 3 vapor discharge)	Condensate buildup on interior surfaces (reduced heat exchange) Chiller failure Coolant recirculation failure Sensor failure - biased high	Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded.	PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown	Emergency Oven Shutdown Emergency Oven Shutdown Emergency Oven Shutdown Emergency Oven Shutdown
T/C2431 - outside lower limit	Temperature (Condenser 3 vapor discharge)	Chiller controller failure Sensor failure - biased low	Warning level exceedance recorded. Warning level exceedance recorded.	PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown	Emergency Oven Shutdown Emergency Oven Shutdown
PIT2205 - outside upper limit	Carbon differential pressure	Failure of pre-filter causing buildup of particulate matter restricting flow Buildup of fine particulate matter not captured by pre-filter Sensor Failure - loss of signal Sensor failure - biased high	Warning level exceedance recorded. Warning level exceedance recorded. N/A Warning level exceedance recorded.	PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown	Emergency Oven Shutdown Emergency Oven Shutdown Emergency Oven Shutdown Emergency Oven Shutdown
PIT2205 - outside lower limit	Carbon differential pressure	Lose of carbon from filter Channelling of air flow through carbon Sensor failure - biased low	Warning level exceedance recorded. Warning level exceedance recorded. Warning level exceedance recorded.	PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown PLC will alarm and initiate shutdown	Emergency Oven Shutdown Emergency Oven Shutdown Emergency Oven Shutdown

Appendix FF
Not Needed for 2025 FPOR Renewal
(Closure Cost Table 10-1 Support Documentation)

Appendix GG

AECOM Corrective Action Plan Update

Corrective Action Plan Update 2023 - Revision 1

Veolia ES Technical Solutions, LLC
1275 Mineral Springs Drive Port Washington, Wisconsin

FID#: 246076050 BRRTS# 02-46-563238

AECOM Project number: 60686229

March 1, 2024
Revision Date: May 31, 2024

Corrective Action Plan Update 2023, Revision 1

Veolia ES Technical Solutions, LLC
1275 Mineral Springs Drive,
Port Washington, Wisconsin

FID#: 246076050
BRRTS#: 02-46-563238

Prepared for:

Veolia ES Technical Solutions, LLC

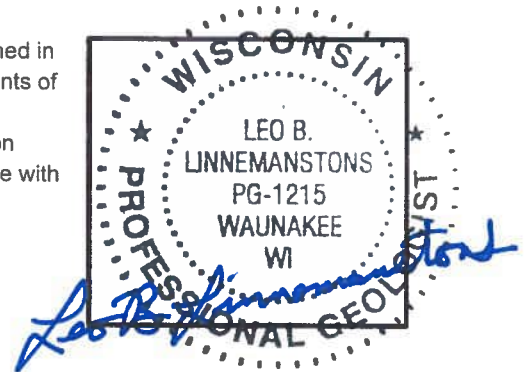
Prepared by:

I, Leo Linnemanstons, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, the information contained in this document is correct and the document was prepared in compliance with applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.



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I, Timothy P. Wood, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E8, Wis. Adm. Code, and that, to the best of my knowledge, the information contained in this document is correct and the document was prepared in compliance with applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.



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Prepared for:

Veolia ES Technical Solutions, LLC

I, Scott Thibodeau, certify under penalty of law that this document and all attachments were prepared under my direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



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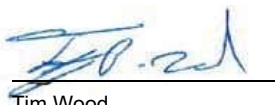
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Revision History

Revision	Revision date	Details	Authorized	Name	Position

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Appendices

Appendix A	Wisconsin Department of Natural Resources, 2023 CAPU Comment Email, March 28, 2024
Appendix B	Wisconsin Department of Natural Resources, SIR Technical Review Letter, June 22, 2023
Appendix C	Impacted Sediment Removal Action Cost Estimate
Appendix D	Updated Cost Estimates for Remaining Corrective Actions

1. Introduction

Veolia ES Technical Solutions, LLC (Veolia) owns and operates the Mineral Springs facility located at 1275 Mineral Springs Drive, Port Washington, Wisconsin. A description of the facility and a brief history of its operation is described in Sections 1.3 and 1.4 below.

In accordance with Section 19 of the June 23, 2020, “*Class 1.1 License Modification Determination*” (*Class 1-1 Approval*), AECOM has prepared for Veolia this Corrective Action Plan Update (CAPU) to the Corrective Action Plan Update submitted on March 1, 2022 and the previous Corrective Action Plan Updates. The previous Corrective Action Plan, Revision 1 (revised CAP) submitted on November 4, 2021 and its accompanying Response to Comments letter were submitted to address comments provided by the Wisconsin Department of Natural Resources (WDNR) in their Notice of Incompleteness (NOI), dated June 29, 2021. The NOI was issued regarding the original Corrective Action Plan, dated March 31, 2021, which was submitted in accordance with Section 17 of the *Class 1-1 Approval*. The WDNR provided conditional approval of the revised CAP in their letter dated February 3, 2022 regarding the “*Class 2 License Modification Determination*” (*Class 2 Approval*).

The purpose of this CAPU is to provide a description of the remedial actions, investigative results, and monitoring activities for the period January 1, 2023 through December 1, 2023. The CAPU describes the work necessary to perform the remaining corrective actions indicated by the site monitoring and required by the Class 1-1 and Class 2 Approvals. This CAPU revision incorporates modifications to address comments provided by the WDNR in their email, dated March 28, 2024, regarding the original 2023 CAPU, dated March 1, 2024. The WDNR email is provided as Attachment A for reference and is annotated with specific responses that were then incorporated into this revision.

1.1 Responsible Party Information

Veolia is the responsible party for the Veolia Mineral Springs Facility (Site) located in Port Washington Wisconsin. Veolia has designated Mr. Justin Provo as the responsible party contact person. Mr. Provo’s contact information is as follows:

Current Property Owner:	Veolia ES Technical Solutions, LLC.
Address:	700 E. Butterfield Road, Suite 201 Lombard, Illinois 60148
Phone:	(630) 218-1500
Owner Contact:	Mr. Justin Provo
Address:	Veolia ES Technical Solutions, LLC 1275 Mineral Springs Drive Port Washington, Wisconsin, 53074
Phone:	(262) 225-1043

1.2 Consultant

Consultant:	AECOM Technical Services, Inc.
Address:	1350 Deming Way Middleton, WI 53562
Contact:	Mr. Leo B. Linnemanstons
Phone:	(608) 828-8208

1.3 Site Description and Location

The Site is located in an industrial park in the City of Port Washington (see Figure 1), in the northwest quarter of the southeast quarter of Section 32, Township 11 North, and Range 22 East of the Public Land Survey System. The Site address is 1275 Mineral Springs Drive, Port Washington, Wisconsin. The Site is bordered to the east by Mineral Springs Drive and to the south Maritime Drive.

The rectangular shaped parcel comprises approximately 11 acres and includes two Site buildings (see Figure 2).

The approximate northern half of the facility consists of vacant land and a large pond. The majority of facility runoff discharges to this pond. There are two intermittent creeks running north-south, approximately 500 feet east and west of the facility. The creeks ultimately discharge to Lake Michigan near the We Energies power plant located to northeast. The southern half of the facility is comprised primarily of asphalt and concrete pavement, as well as the main facility building.

1.4 Correction Action Plan History

On March 30, 2021, Veolia submitted a *Corrective Action Plan* to WDNR detailing the following actions to occur based on past investigation results: remedial mercury soil excavation in DU-4, site groundwater monitoring annually for 2 years, offsite soil investigation (DU-4) and additional sediment investigation (DU-6 and DU-7).

Following comments from WDNR, a revised *Correction Action Plan Revision 1* was submitted in November 2021. Updates on these actions were summarized in the 2021 Corrective Action Plan Update.

The 2021 additional corrective actions events and results are summarized as follows:

- Remedial mercury soil excavation for residual mercury concentrations greater than the direct contact (DC) residual contaminant limit (RCL) occurred in DU-4 removing approximately 82.5 tons of soil.
- The first round of annual groundwater monitoring yielded no detection of mercury above laboratory method detection limits in any of the groundwater samples.
- Offsite soil investigation determined the extent of groundwater protection (GW) RCL exceedances in soil is limited to just shallow surface soils (< 0.5 ft bgs) and to isolated areas at the eastern property boundary along Mineral Springs Drive and do not extend across the street.
- Additional sediment investigation within DU-6 and DU-7 at six locations detected mercury concentration above the midpoint effect concentration (MEC) of 0.64 mg/kg within DU-6 and DU-7. Additional sediment sampling was proposed to further define the extent of mercury impacts to sediment in the storm pond.

In 2022, the fourth biennial ISM soil and sediment sampling was conducted, and the results were submitted in the *2022 Surface Soil and Sediment ISM Report* on February 27, 2023.

The 2022 ISM monitoring event findings concluded the following:

- The 95% UCL mercury concentrations in surface soils within DU-1 through DU-3 has been and continue to be below the DC RCL since 2016.
- The 95% UCL mercury concentrations in surface soils within DU-4 has continued to be below the DC RCL since 2020.
- The 95% UCL mercury concentrations in surface soils within DU-5 has continued to be below the DC RCL since 2018.
- The 95% UCL mercury concentration in sediment within DU-6 has continued to be below the MEC since 2016.
- The 95% UCL mercury concentration in sediment within DU-7 has continued to be below the MEC since 2020.

These findings are consistent with the previous ISM event completed in 2020 and do not indicate a change in conditions or additional mercury impacts.

Results of the additional sediment and groundwater sampling, as proposed in the *2021 Corrective Action Plan Update*, was reported in the *Summary Site Investigation Report* submitted on February 28, 2023. A summary of these actions is included in this 2023 Corrective Action Plan Update.

2. Corrective Actions

Based on past and current investigations at the facility, the revised CAP and subsequent updates identified the following corrective actions:

Actions Completed in 2021

- Remedial Mercury Soil Excavation (DU-4); removed mercury impacts greater than DC RCL;
- Site Groundwater Monitoring (2 years, annually), first round completed, no detections;
- Offsite Soil Investigation (DU-3 and DU-4); delineated GW RCL exceedances;
- Additional Sediment Investigation (DU-6 and DU-7), concluded further investigation needed.

Actions Completed in 2022 (described in 2023 SIR)

- Site Groundwater Monitoring (2 years, annually), second round completed, no detections;
- Additional Sediment Investigation (DU-6 and DU-7), delineated MEC exceedances.

Actions Completed in 2023 (described within this CAPU)

- Groundwater water levels were collected on November 21, 2023.
- Site Investigation Report (SIR) was completed, which included the 2022 sediment sampling and groundwater sampling site activities. The WDNR technical review letter (dated June 22, 2023), included in Appendix A, of the SIR approved the following recommendations:
 - Soils - Soils at the site have been evaluated to characterize the extent and magnitude for mercury impacts. However, soil impacts exceeding GW RCLs (DU-3 (SE2, SE1, SE3), DU4-T1-1, and DU4-T3-6) will require additional evaluation to prevent migration to groundwater.
 - Groundwater - Groundwater monitoring may be discontinued due to historical sampling results indicating the impacted soils have not affected the groundwater at the Site. However, the WDNR does recommend keeping monitoring wells at the site for annual water level collections and for final closure.
 - Sediment - The WDNR agrees that sediment impacts have been delineated in the storm pond and are generally shallow. As a result, a RAOR should be submitted to develop and evaluate remedial alternatives for the remaining mercury impacted sediments on the southern portion of the storm pond.
 - Emerging Contaminates & Vapor Intrusion Assessment - WDNR agrees that mercury impacts do not pose a vapor intrusion risk at the site.

Actions in progress (described within this CAPU)

- Sediment Remedial Action Options Report;
- Sediment Remediation (if necessary);
- Supplemental Site Investigation (if necessary);
- WDNR BRRS Case Closure (BRRS# 02-46-563238).

Based on the site investigations and completed remedial actions, Veolia does not believe that residual mercury levels onsite pose an immediate risk to human health or the environment. Veolia will continue to monitor and conduct investigations that the WDNR believes are necessary to determine if further actions are warranted.

2.1 Site Groundwater Monitoring

2.1.1 Corrective Action Background

As part of the 2020 Additional Site Investigation, six new monitoring wells (MW-3 through MW-8) were installed to evaluate groundwater across the entire site. The locations of the new and previous site monitoring wells (MW-1 to MW-8) are shown on Figure 3. Results of the second groundwater monitoring event was reporting in the Summary Site Investigation Report, dated February 28, 2023. Groundwater results were compared to the Chapter NR140, WAC, Enforcement Standard (ES) and Preventive Action Limit (PAL). Based on results from the sampling event, mercury was not detected above the laboratory method detection limits, which is consistent with historical results. Therefore, groundwater does not appear to be impacted by residual mercury concentrations in soil at the facility. In the WDNR technical review letter (dated June 22, 2023), the WDNR agreed that groundwater sampling may be discontinued and that the monitoring wells may be retained for annual water level monitoring until facility closure at a future date.

2.1.2 Groundwater Elevations

The annual groundwater elevation measurements were collected on November 21, 2023. Groundwater was observed at approximately 2 to 15 feet below ground surface (bgs). Groundwater elevations were calculated ranging from 688 to 703 feet above Mean Sea Level (MSL). The groundwater high is located by MW-4, which is on the eastern part of the Site, and the groundwater low is at MW-6, which is located on the western part of the Site. Based on interpretation of the water table surface, local groundwater flow is to the west and northwest. The horizontal hydraulic gradient was calculated to be 0.022 ft/ft across the central portion of the Site along a flow path between contour lines 702 ft (by MW-4) and 696 ft (by storm pond). The horizontal hydraulic gradient is similar to historical estimates. Groundwater contours and monitoring well locations are shown on Figure 3.

2.2 Supplemental Site Investigation – Off-Site at DU3

Based on WDNR RR Program comments on site investigation results, a supplemental site investigation may be necessary in the off-site area in the vicinity of DU3. The purpose of the supplemental investigation will be to provide delineation of mercury soil impacts greater than the groundwater protection RCL. Prior to undertaking the supplemental investigation activities, Veolia will prepare a site investigation workplan for the off-site area. The workplan will be submitted to the WDNR for review and input. After the supplemental site investigation activities are completed, a supplemental site investigation report will be prepared summarizing the findings. Estimated costs for the supplemental site investigation are included the cost estimate in section 4.3 of this report.

2.3 Sediment Correction Action

2.3.1 Background

Based on the results presented in the *Additional Site Investigation Report* (February 18, 2021) and sediment sampling performed in 2021 as reported in the *Corrective Action Plan Update 2021*, AECOM proposed additional sediment sampling. Following the procedures described in the *Corrective Action Plan Update 2021*, ten sediment locations were sampled in 2022 from beyond the DU-6 and DU-7 areas to delineate the extent of mercury impacts to sediment in the storm pond.

The 2022 sediment samples were documented in the 2023 SIR. A total of 13 sediment samples, plus one duplicate sample, were analyzed from the 10 sample locations in the storm pond. Sediment sample results were compared to the mercury Midpoint Effect Concentration (MEC) of 0.64 mg/kg. The three samples that exceeded the MEC were located in the vicinity of DU-6 and DU-7 on the southern end of the storm pond. Only the samples from the 0 to 0.5-foot interval exceeded the MEC, and the deeper samples were less than the MEC. Based on current and previous sediment monitoring, the samples successfully delineated the extent of Midpoint Effect Concentration (MEC) exceedances. In the WDNR approval letter, dated June 22, 2023, the WDNR agreed the sediment impacts have been delineated in the storm pond and are generally shallow. Sample locations and results are shown in Figure 4.

The WDNR technical review letter (dated June 22, 2023) of the SIR agreed that the sediment impacts have been delineated in the storm pond and are generally shallow. As a result, a RAOR should be submitted to develop and

evaluate remedial alternatives for the remaining mercury impacted sediments on the southern portion of the storm pond.

2.3.2 Sediment Remedial Action Options Report

Based on approval of the *Summary Site Investigation Report* by the RR Program, Veolia is proceeding with the preparation of a remedial action options report (RAOR) to develop and evaluate potential remedial alternatives to address the mercury impacts in the storm pond. Remedial options and technologies to be evaluated for impacted sediment are anticipated to include no action, dredging, capping, institutional controls, or a combination of alternatives. The criteria for evaluation of potential remedial options will follow WDNR standards and consider the overall protection of human health and the environment, long- and short-term effectiveness, implement ability, restoration timeframe, economic feasibility, and any site-specific criteria as determined by the WDNR.

2.3.3 Sediment Remedy Implementation (if necessary)

For the purpose of corrective action planning and financial assurance reporting, AECOM prepared an estimated cost to perform a potential sediment remedy to address mercury impacts in the storm pond. Based on AECOM's experience, remedial options that may be considered may range from no further action to removal of impacted sediment. In general, sediment removal is often considered the most conservative approach, but also the most costly. No further action may be appropriate if data is produced indicating that the impacts do not pose a risk to human health or the environment. Until the remedial alternative is selected, Veolia has elected to conservatively assume that a removal remedy may be required to address the impacted sediment. Based on that assumption, AECOM has prepared an estimated cost for a possible mercury sediment removal action, which is included in Appendix B.

2.4 WDNR BRRTS Case Closure (BRRTS# 02-46-563238)

The final corrective action will be receiving case closure from the RR Program upon completion of remedial actions. Site investigation activities for soil and groundwater pathways appear to be complete, and additional sediment investigation completed in 2022 appear to have delineated the extent of mercury impacts in the onsite storm pond. The WDNR technical review letter (dated June 22, 2023) of the SIR agreed a RAOR should be submitted to develop and evaluate remedial alternatives for the remaining mercury impacted sediments on the southern portion of the storm pond. Once a remedy is approved and implemented (if necessary), a site closure application will be prepared for submittal to the WDNR.

The ability to move forward with a case closure application assumes that the facility does not have a new release to the environment that requires investigation or remediation. In addition, the biennial ISM soil and sediment monitoring does not trigger the need for a new investigation.

Based on the site investigation results, the site is anticipated to be closed with the following continuing obligations:

- Residual onsite soil contamination greater than the GW RCL,
- Residual sediment in the onsite storm pond greater than the MEC, and
- Groundwater use restriction for the property.

Once the WDNR grants closure to the BRRTS case, groundwater sampling of the onsite monitoring wells will no longer be necessary. However, the monitoring wells may be maintained for annual water level measurements. The monitoring wells will be planned for abandonment as part of the overall facility closure at a future date.

3. Non-Corrective Action Routine Monitoring Activities

3.1 Biennial ISM Soil and Sediment Monitoring

Biennial ISM Surface Soil and Sediment Monitoring is required by Item 65, "Routine Mercury Monitoring" in the September 4, 2015, Final Determination Conditional Approval for the facility. This operational requirement is not a corrective action, but a planned monitoring activity that occurs every 2 years. The results of the sampling may generate a corrective action. When a necessary corrective action is identified, the corrective action will be incorporated into the annual Corrective Action Plan updates.

Veolia conducted the 2022 biennial soil and sediment sampling for mercury in five surface soil decision units (DUs) and two sediment DUs following the ITRC ISM guidance. The 2022 locations and results are shown on Figure 5. The sampling is conducted according to the *Surface Soil and Sediment Monitoring Plan, Veolia ES Technical Solutions, LLC, Port Washington, Wisconsin*, dated December 2015.

The following standards are used as action triggers for comparison to the mercury test results:

- Surface soil: 3.13 mg/kg, Direct-Contact (DC) Residual Contaminant Level (RCL), Chapter NR 720, Wisconsin Administrative Code (updated January 2015); and
- Sediment: 0.64 mg/kg, midpoint effect concentration (MEC), Consensus-Based Sediment Quality Guidelines, WDNR Interim Guidance (December 2003).

Statistical analysis of the laboratory results for the field and laboratory replicates collected from each DU was performed to determine the representative mercury concentration at the 95% Upper Confidence Level (UCL).

The 2022 ISM monitoring event findings are summarized as follows:

- The mercury concentrations in surface soils within DU-1 through DU-3 has been and continue to be below the DC RCL since 2016.
- The mercury concentrations in surface soils within DU-4 continue to be below the DC RCL since 2020.
- The mercury concentrations in surface soils within DU-5 continue to be below the DC RCL since 2018.
- The mercury concentration in sediment within DU-6 continue to be below the MEC since 2016.
- The mercury concentration in sediment within DU-7 continue to be below the MEC since 2020.

These findings are consistent with the previous ISM event completed in 2020 and do not indicate a change in conditions or additional mercury impacts. The soil DU samples were below the DC RCL, and the sediment DU samples were below the MEC.

Biennial ISM soil and sediment sampling in the DUs is planned to continue with the next sampling event scheduled to occur in 2024.

4. Schedule and Cost Estimate

The following schedule and cost estimate were developed to implement the remaining Corrective Actions as described in this CAPU. AECOM developed the planned schedule given its knowledge of site conditions and previous experience performing the same or similar tasks at this site. AECOM has performed environmental consulting services for Veolia at this facility since 2014. The following is a list of completed activities to support AECOM's relevant experience for developing this schedule:

- AECOM conducted sediment sampling events for Veolia in 2015, 2016, 2017, 2018, 2019, 2020, 2021, and 2022.
- AECOM conducted groundwater monitoring events for Veolia in 2015, 2019, 2020, 2021, 2022 and 2023.
- AECOM prepared this CAPU for Veolia in February 2024 and has prepared other site investigation and remedial action documentation reports for this facility from 2014 to present.
- AECOM has prepared case closure applications for other clients and sites in Wisconsin including the past year and is familiar with the current WDNR requirements.

4.1 Implementation Schedule

At the direction of Veolia, AECOM has updated the following schedule for implementing the remaining Corrective Actions. Because Condition 16.c. of the Class 1-1 Approval required investigation be completed by December 31, 2020, the 2021 CAPU requested that the WDNR approve an extension to December 31, 2022 to complete additional sequenced investigations. The WDNR approved the extension only for the proposed additional sequenced investigations, which was understood to be the annual groundwater monitoring and additional sediment sampling. Based on the WDNR's RR Program approval of the Site Investigation Report (WDNR letter, dated June 22, 2023), Veolia concluded that Condition 16.c of the Class 1-1 Approval was completed by the extended date of December 31, 2022, and no further extension is needed for investigation. If WDNR RR Program requests additional investigations to supplement the site investigation, Veolia will request a new extension to Condition 16.c. of the Class 1-1 Approval.

As the next step, a ROAR is being prepared to address options for the sediment in the storm pond. Once the ROAR is submitted, Veolia will plan to proceed with selection of a sediment remedy in 2024 and followed by a case closure application in 2025. Veolia recognizes continuing obligations may be designated as part of the case closure. If there is a need for additional investigations or once a remedial activity is identified, Veolia will direct that AECOM revise this schedule and request a subsequent approval from WDNR.

Corrective Action	Schedule	Duration	Completion Date
Sediment Remedial Action Options Report (NR724)			
RAOR preparation & submittal	June 2024	Three months	August 2024
WDNR Review	September 2024	Two months	November 2024
Supplemental Site Investigation (if necessary)			
Site Investigation activities & report submittal	July 2024	Three months	September 2024
WDNR Review	September 2024	Two months	October 2024
Implement Remedial Action (if necessary)			
Implement remedial action & documentation report	January 2025	Six months	July 2025
WDNR Review	August 2025	Two months	September 2025
Case Closure Request (NR726)			
Case closure preparation & submittal	October 2025	Three months	December 2025
WDNR Review	January 2026	Two Months	February 2026

4.2 Corrective Action Completion Date

Based on discussion with the WDNR RR Program, Veolia will determine if supplemental investigation activities need to be planned. A remedial option for sediment may be selected in 2024 and implemented in 2025. Therefore, a case closure request may be anticipated by the end of 2025 based on the following assumptions:

- the facility does not have a new release to the environment that requires investigation or remediation;
- the RR Program does not require further groundwater monitoring;
- a NR722 Remedial Action Options Report determines a remedy that may be readily implemented;
- if a sediment remedy needs to be performed, the selected remedial remedy is successfully implemented; and
- the biennial ISM soil and sediment monitoring does not trigger the need for a new investigation.

Assuming that the case closure application is complete and that WDNR grants case closure, the Corrective Action is expected to be completed by March 2026.

4.3 Cost Estimate

The following table shows the cost estimate for the remaining corrective action activities. These estimates are based on the AECOM's experience conducting similar work at the facility over the past 9 years. These remaining corrective actions consist of environmental consulting services that have and are typically performed by AECOM. In conducting these environmental consulting services, AECOM uses the services of subcontractors that provide their services at competitive unit rates. AECOM's environmental consulting services consist of labor and material costs, which are estimated based on our experience performing the planned remaining corrective actions.

For the purpose of these cost estimates, each of the remaining corrective actions were broken down into tasks that consist of labor and material costs with the addition of subcontractor costs where appropriate. The detailed breakdown of the estimated costs for each of the tasks is provide in Appendix C and D. The breakdown is presented as tables that include units, unit cost, extended costs, and total cost. The breakdown tables also are annotated to identify key assumptions that were relied upon in developing the estimate. A summary table is also provided that shows the estimated costs, by year, for completion of the corrective actions. Costs will be updated based on the ROAR options and inflation cost estimates will be added in the 2024 FA Report.

Corrective Action	2023 CAPU Estimated Cost	Contingency (10%)	Total Estimated Cost
Supplemental Site Investigation (if necessary)	\$26,662	\$2,666	\$29,328
Sediment Remedial Action Options Report	\$20,602	\$2,060	\$22,662
Sediment Removal (assumed worst case)	\$1,152,021	\$115,202	\$1,267,223
Case Closure Request	\$9,975	\$998	\$10,973
Grand Total Estimate Cost			\$1,330,186

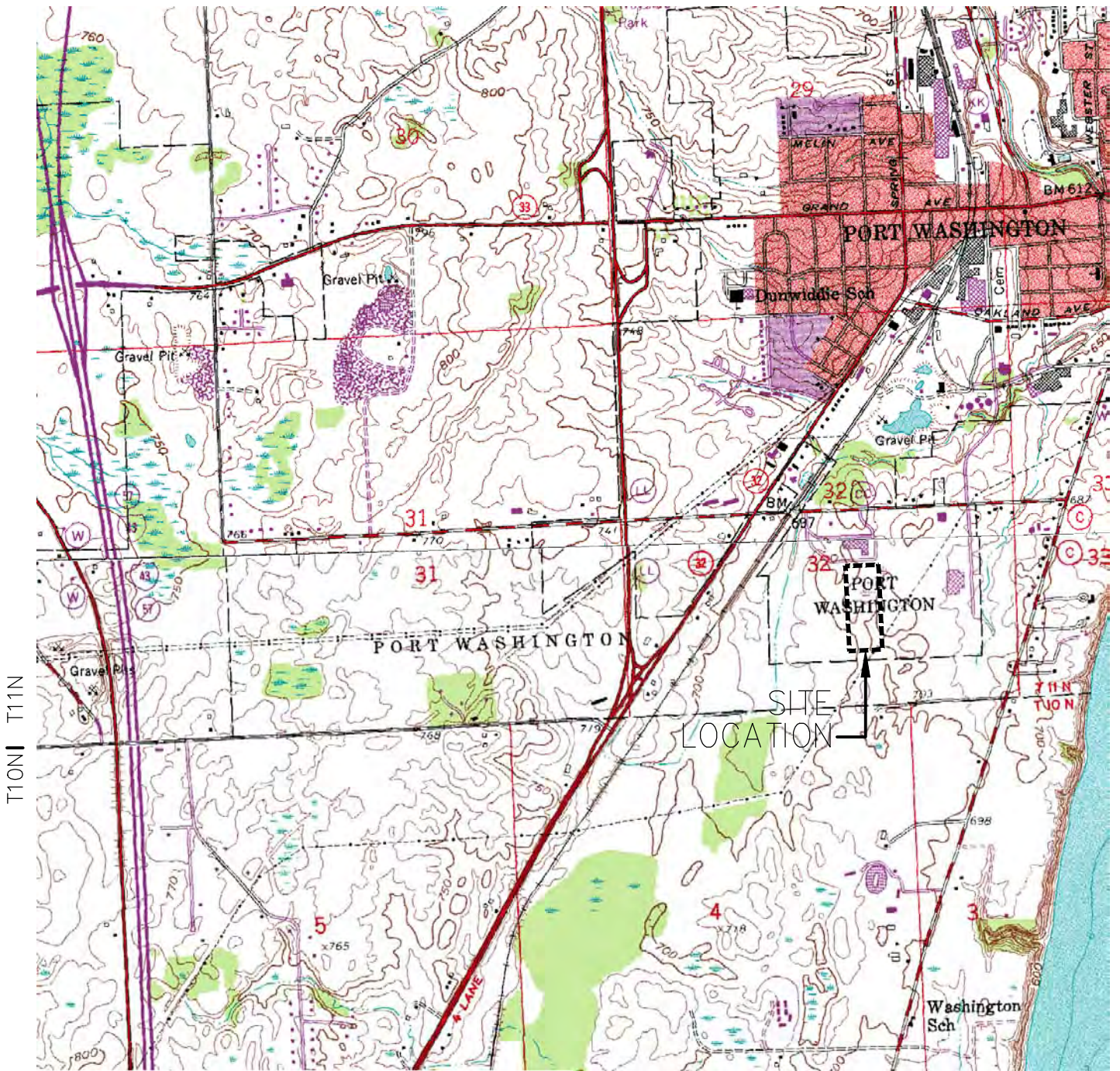
4.3.1 Financial Assurance Report

In accordance with Condition 20 of the Class 1-1 Approval, Veolia will submit an annual Financial Assurance Report (FA Report) by May 1 of each year, which will consider any WDNR comments regarding the current CAPU. Based on WDNR comments in their email dated March 28, 2024, the next FAR will include this revised 2023 CAPU and be submitted to WDNR by June 1, 2024.

Figures

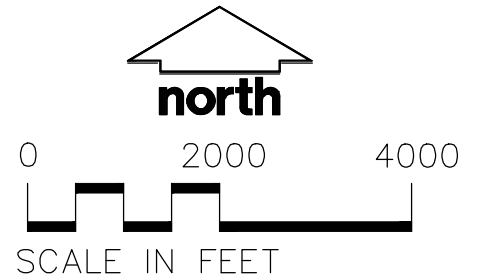
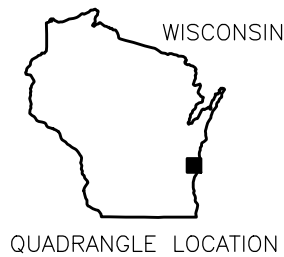
Figure 1	Site Location Map
Figure 2	Site Features Map
Figure 3	Monitoring Well Locations and Groundwater Contours Map (2023)
Figure 4	Additional Sediment Investigation Locations (2022)
Figure 5	2022 Soil and Sediment Statistical Analysis Results For Mercury

R21E | R22E



NOTE

BASE MAP DEVELOPED FROM THE PORT WASHINGTON WEST, WISCONSIN AND CEDARBURG, WISCONSIN 7.5 MINUTE U.S.G.S. TOPOGRAPHIC QUADRANGLE MAPS, DATED 1959. PHOTOREVISED 1971 AND 1976 WITH MINOR REVISION 1994. U.S.G.S. AERIAL PHOTOGRAPHS DATED MARCH 31, 2000 WERE ALSO USED TO LOCATE THE SITE.



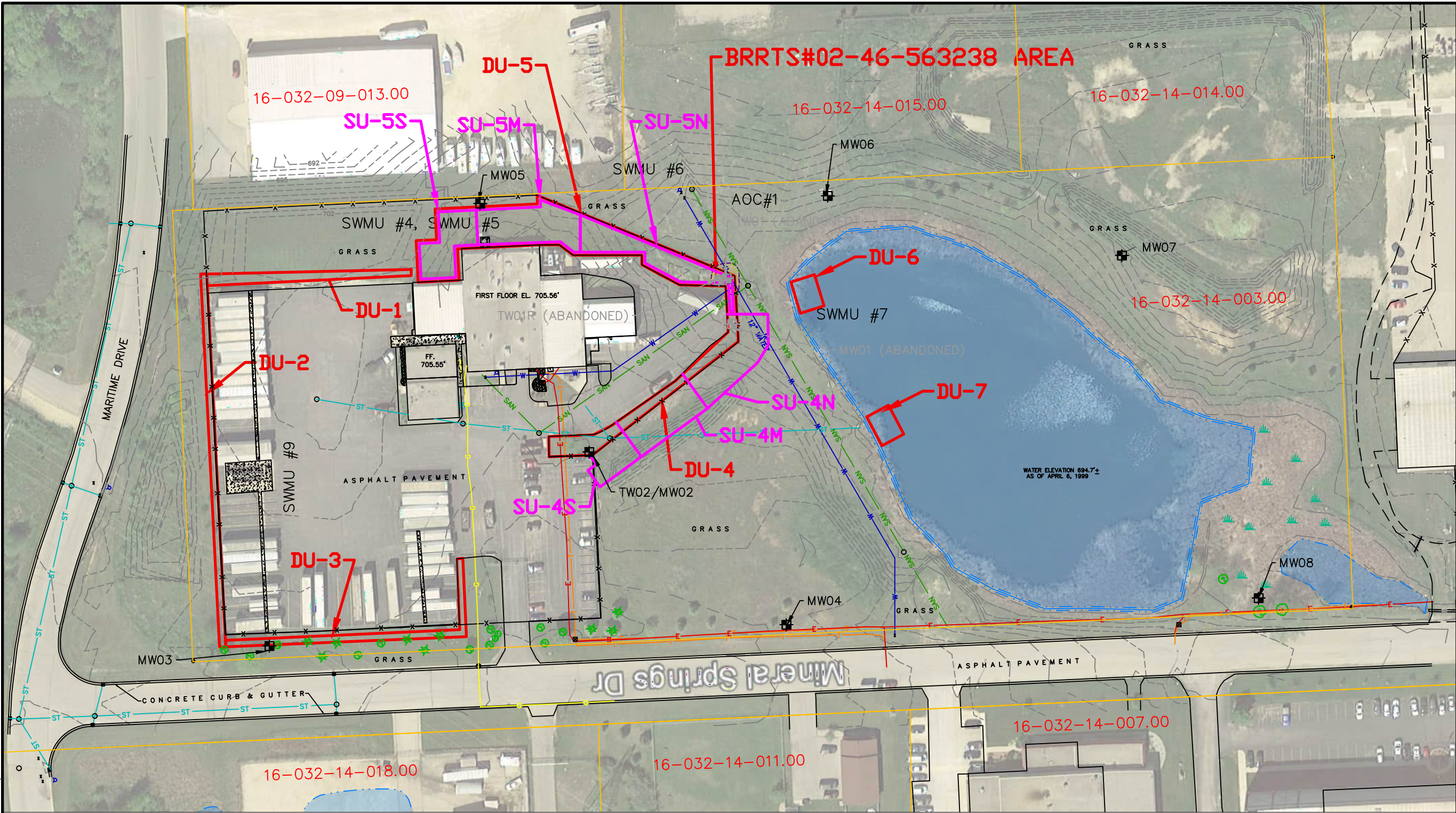
VEOLIA ES
1275 MINERAL SPRINGS DRIVE
PORT WASHINGTON, WI
Project No.: 60515660

SITE LOCATION MAP

AECOM

CORRECTIVE ACTION PLAN

FIGURE NUMBER 1

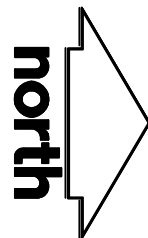
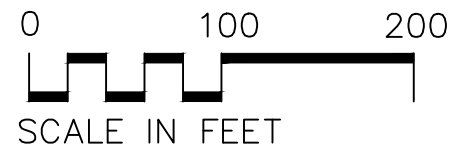


LEGEND

- SWMU#1 SOLID WASTE MANAGEMENT UNIT LOCATION AND NUMBER
- AOC#1 AREA OF CONCERN LOCATION AND NUMBER
- DU-1 DECISION UNITS (INCREMENTAL SAMPLING AREAS)
- SU- SAMPLING UNITS (WITHIN DU-5 AND DU-4)
- MW03 MONITORING WELLS (Feet MSL)
- TW01 ABANDONED MONITORING WELLS

NOTES

1. BASE MAP DEVELOPED FROM A DRAWING "SITE FEATURES" PREPARED BY STS CONSULTANTS LTD., VERNON HILLS, ILLINOIS, DATED SEPTEMBER 15, 2010. BEARINGS AND GRID REFERENCED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM - SOUTH ZONE.
2. ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1929. SITE BENCHMARK: NE FLANGE BOLT ON HYDRANT NORTH SIDE OF MARITIME DRIVE. ELEVATION = 703.22.
3. TOPOGRAPHIC MAPPING PREPARED FROM FIELD SURVEYS COMPLETED ON APRIL 7, 1999.
4. AERIAL PHOTOGRAPH FROM GOOGLE EARTH PRO; IMAGED DATE: 6/1/2015; DOWNLOAD DATE: 5/16/2017.



AECOM

PROJECT

CORRECTIVE ACTION
PLAN UPDATE (2022)

CLIENT

VEOLIA ES TECHNICAL
SOLUTIONS, LLC
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PORT WASHINGTON, WISCONSIN

CONSULTANT

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REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER

60686229

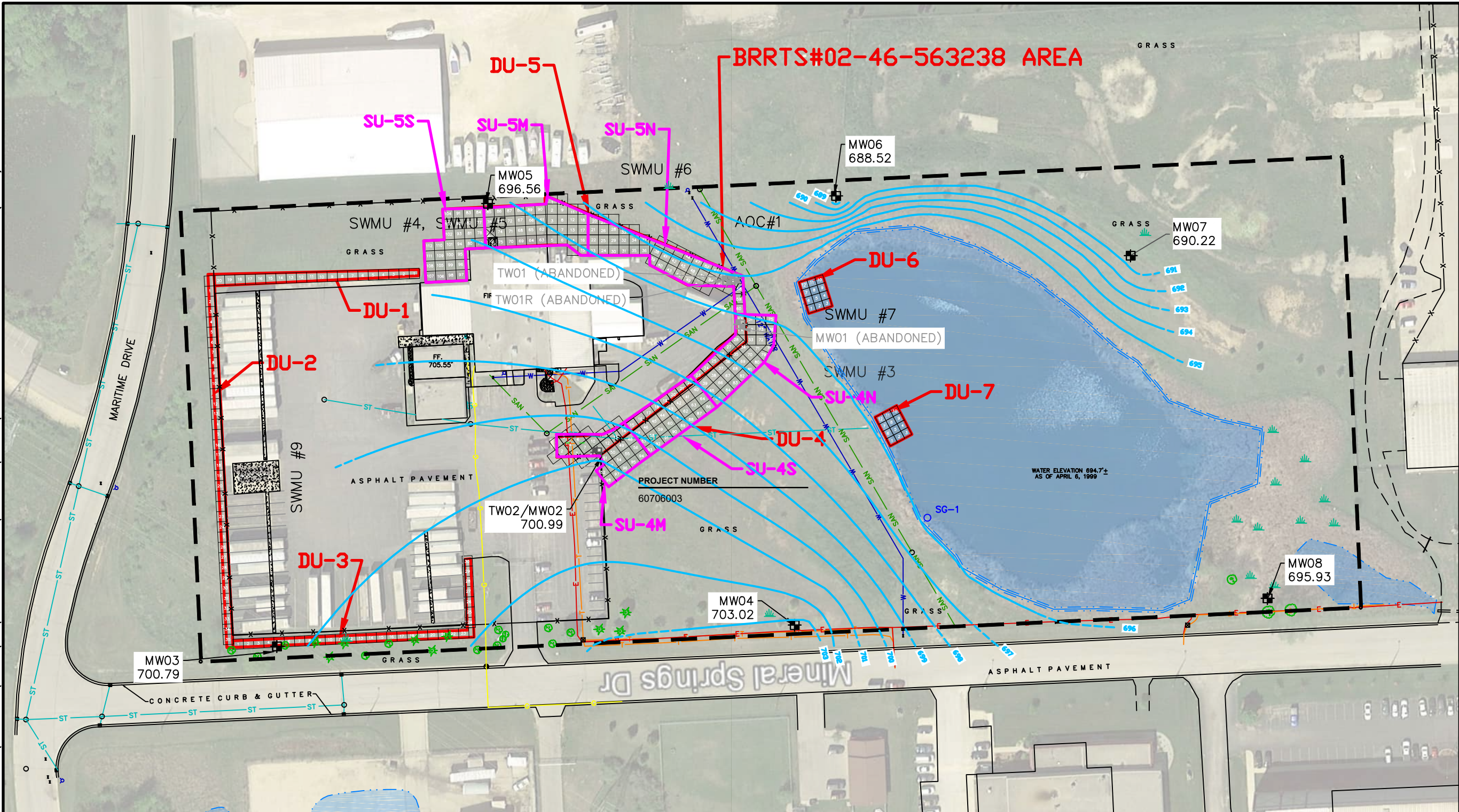
FIGURE TITLE

SITE FEATURES MAP

FIGURE NUMBER

2

I/R	02/21/2024	MO
I/R	DATE	DESCRIPTION



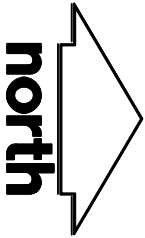
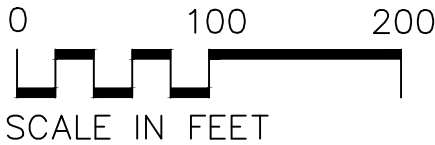
- LEGEND**
- DU-1 DECISION UNITS (INCREMENTAL SAMPLING AREAS)
 - SU-5S SAMPLING UNITS (WITHIN DU-5)
 - SG-1 STAFF GAUGE (Feet MSL)
 - MW03 MONITORING WELLS (Feet MSL)
 - PROPERTY BOUNDARY
 - WATER TABLE CONTOUR, in Feet MSL (DASHED WHERE INFERRED)
 - TW01 ABANDONED MONITORING WELLS

Chapter NR 140 Groundwater Quality, Wisconsin Administrative Code,

- 2 µg/L - Enforcement Standard (ES) for mercury
- 0.2 µg/L - Preventive Action Limit (PAL) for mercury

Mercury has not been detected in any groundwater samples for the site.

- NOTES**
- BASE MAP DEVELOPED FROM A DRAWING "SITE FEATURES" PREPARED BY STS CONSULTANTS LTD., VERNON HILLS, ILLINOIS, DATED SEPTEMBER 15, 2010.
 - BEARINGS AND GRID REFERENCED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM - SOUTH ZONE.
 - ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1929. SITE BENCHMARK: NE FLANGE BOLT ON HYDRANT NORTH SIDE OF MARITIME DRIVE. ELEVATION = 703.22.
 - TOPOGRAPHIC MAPPING PREPARED FROM FIELD SURVEYS COMPLETED ON APRIL 7, 1999.
 - AERIAL PHOTOGRAPH FROM GOOGLE EARTH PRO; IMAGED DATE: 6/1/2015; DOWNLOAD DATE: 5/16/2017.
 - WATER LEVELS SHOWN WERE MEASURED BY AECOM ON NOVEMBER 21, 2023



Plotted By: KulinskiC
Plot File Date Created: Feb/24/2023 10:31 AM
Layout-Sheet Name: 11X17L
Filename: C:\USERS\KULINSKI\APPDATA\LOCAL\TEMP\AC\PUBLISH_10216\FIGURE 10-ADDITIONAL SEDIMENT INVESTIGATION RESULTS (2022).DWG
Project Management Initials: Designer: TPJ Checked: Approved: ANS/D 22" x 34"

LEGEND

DU-1

DECISION UNITS (INCREMENTAL SAMPLING AREAS)

10

GRID NUMBERS

● 10

SEDIMENT SAMPLE LOCATIONS

⊕ MW04

MONITORING WELLS

Consensus-Based Sediment Quality Guidelines, WDNR Interim Guidance (December 2003)

• 0.64 mg/kg, Midpoint Effect Concentration (MEC); BOLD values indicate exceedance

NOTES

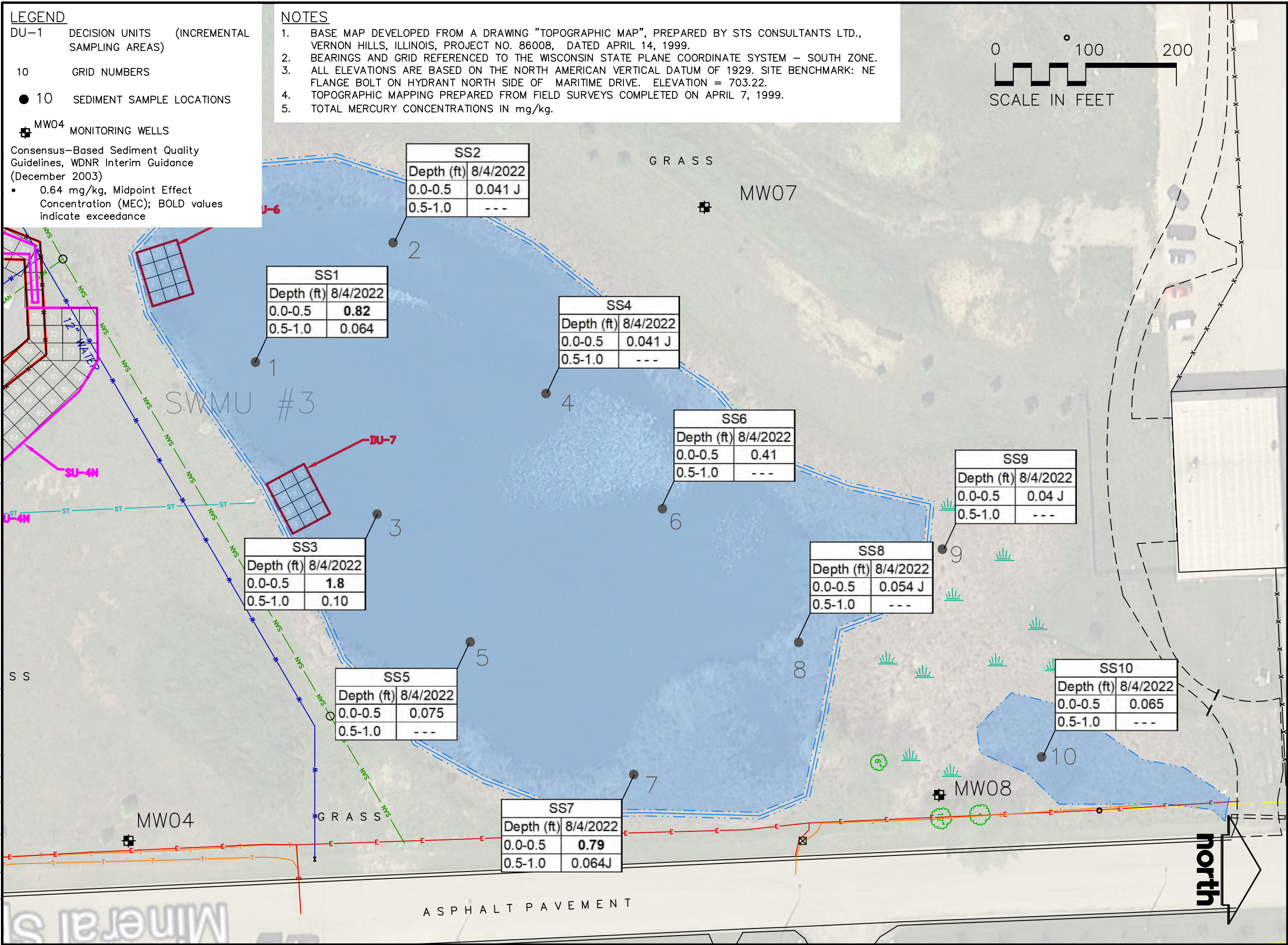
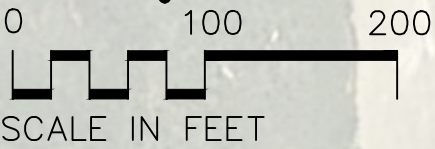
1. BASE MAP DEVELOPED FROM A DRAWING "TOPOGRAPHIC MAP", PREPARED BY STS CONSULTANTS LTD., VERNON HILLS, ILLINOIS, PROJECT NO. 86008, DATED APRIL 14, 1999.

2. BEARINGS AND GRID REFERENCED TO THE WISCONSIN STATE PLANE COORDINATE SYSTEM – SOUTH ZONE.

3. ALL ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1929. SITE BENCHMARK: NE FLANGE BOLT ON HYDRANT NORTH SIDE OF MARITIME DRIVE. ELEVATION = 703.22.

4. TOPOGRAPHIC MAPPING PREPARED FROM FIELD SURVEYS COMPLETED ON APRIL 7, 1999.

5. TOTAL MERCURY CONCENTRATIONS IN mg/kg.



PROJECT
CORRECTIVE ACTION
PLAN UPDATE (2022)

CLIENT
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REGISTRATION

ISSUE/REVISION

NO.	DATE	DESCRIPTION
I/R	01/13/2023	MO
I/R	DATE	DESCRIPTION

KEY PLAN

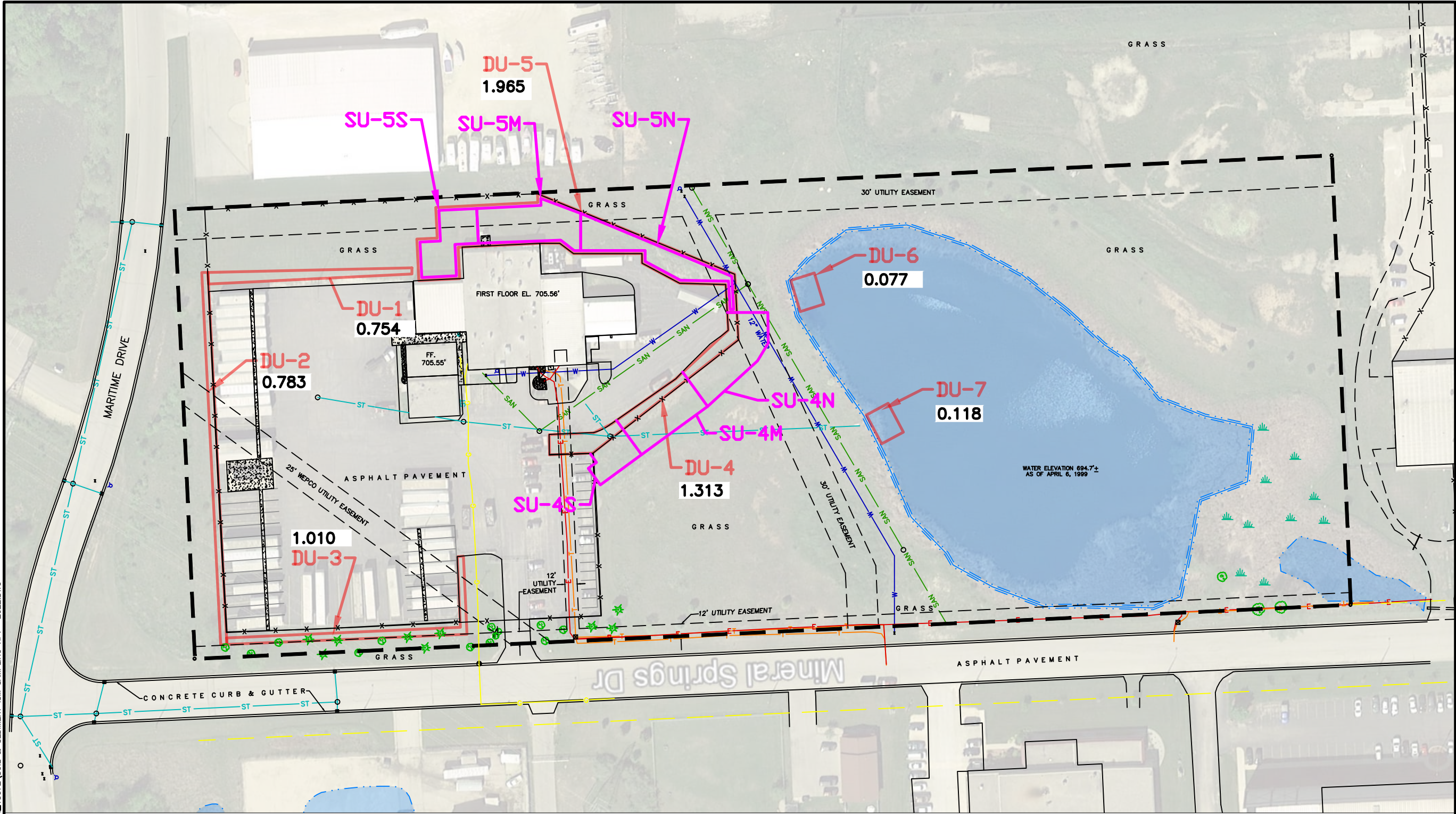
PROJECT NUMBER
60686229

FIGURE TITLE
ADDITIONAL SEDIMENT
INVESTIGATION RESULTS (2022)

FIGURE NUMBER

Plotted By: KulinskiC
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Filename: C:\USERS\KULINSKI\APPDATA\LOCAL\TEMP\AC\PUBLISH_13072\SOIL & SEDIMENT ISM SAMPLING RPT- 2022.DWG

ANSI D 22" x 34"
Approved:
Checked:
Designer: TPJ
Project Management Initials:

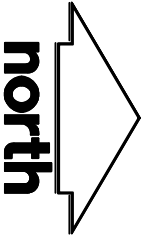
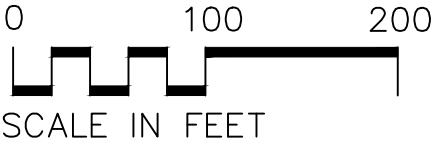


LEGEND

- DU-1 DECISION UNITS
(INCREMENTAL SAMPLING AREAS)
- 0.25 STATISTICAL ANALYSIS RESULTS
FOR MERCURY, IN MILIGRAMS PER
KILOGRAMS - MG/KG
(RED NUMBER INDICATES AN
EXCEEDANCE OF THE RCL OR MEC)

NOTES

1. BASE MAP DEVELOPED FROM A DRAWING
"TOPOGRAPHIC MAP", PREPARED BY STS
CONSULTANTS LTD., VERNON HILLS, ILLINOIS,
PROJECT NO. 86008, DATED APRIL 14, 1999.
BEARINGS AND GRID REFERENCED TO THE WISCONSIN
STATE PLANE COORDINATE SYSTEM - SOUTH ZONE.
2. ALL ELEVATIONS ARE BASED ON THE NORTH
AMERICAN VERTICAL DATUM OF 1929. SITE
BENCHMARK: NE FLANGE BOLT ON HYDRANT NORTH
SIDE OF MARITIME DRIVE. ELEVATION = 703.22.
3. TOPOGRAPHIC MAPPING PREPARED FROM FIELD
SURVEYS COMPLETED ON APRIL 7, 1999.



PROJECT

SURFACE SOIL AND
SEDIMENT
INCREMENTAL
SAMPLING

CLIENT

VEOLIA ES TECHNICAL
SOLUTIONS, LLC
1275 MINERAL SPRINGS DRIVE
PORT WASHINGTON, WISCONSIN

CONSULTANT

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REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER

60515660

FIGURE TITLE

2022 SOIL AND SEDIMENT
STATISTICAL ANALYSIS RESULTS
FOR MERCURY

FIGURE NUMBER

5

Appendix A – Wisconsin Department Natural Resources, 2023 CAPU Comment Email, March 28, 2024

From: Coenen, Douglas W - DNR <Douglas.Coenen@wisconsin.gov>

Sent: Thursday, March 28, 2024 11:54 AM

To: Linnemanstons, Leo <Leo.Linnemanstons@aecom.com>

Cc: Justin Provo <justin.provo@veolia.com>; Matthew Scudder <matthew.scudder@veolia.com>; Kulinski, Courtney <Courtney.Kulinski@aecom.com>; Schultz, Tory <Tory.Schultz@aecom.com>; McIlheran, Adam S - DNR <Adam.McIlheran@wisconsin.gov>; Sholly, Dustin S - DNR <Dustin.Sholly@wisconsin.gov>

Subject: DNR Comments on CAPU; Veolia-Port Wash

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Report Suspicious

Hello, Leo. This is to provide comments on the Corrective Action Plan Update 2023 (CAPU), dated March 1, 2024, regarding the Veolia Mineral Springs (Port Washington, WI) facility. I am providing these in coordination with the department's RR program. Please consider these comments in developing the annual FA Report required in Condition 20 of the June 23, 2020, approval letter.

1. Following adequate SI, a RAOR is the next step if a remedy is required. A remedy is required and so it is reasonable to prepare a RAOR to determine the best method to address the impacts in sediment. Please ensure that the estimated costs of preparing the RAOR are included or explain your assumptions if these costs are not needed.

AECOM Response: The estimated costs for the RAOR are included in the CAPU.

2. Confirmation sampling costs (sediment and surface water) did not appear to be included in the cost estimate. Please ensure that these estimated costs are included or explain your assumptions if these costs are not needed.

AECOM Response: The estimated costs have been revised to include the costs for the confirmation sampling of the sediment and surface water.

3. Following submittal of the RAOR it is reasonable to assume that after a Remedial Action Design Report (RADR) is approved, sediment remediation will occur. It appears that Veolia intends to incorporate the RADR within the RAOR, but this was not specifically discussed or indicated in the CAPU's estimated costs. Veolia should consider how they will address contaminated sediment in the stormwater pond. Regulatory requirements for the management of accumulated sediment from stormwater management structures (Wis. Admin. Code NR 528) do not apply to contaminated sediment. Although the stormwater pond is not connected to a navigable waterway, Veolia may find some information in RR-0124 *Guidance on Addressing Contaminated Sediment Sites in Wisconsin*, helpful in understanding DNR expectations regarding development of RAOR, remediation design, and closure conditions as they relate to contaminated sediment onsite. The guidance can be found on the DNR Remediation and Redevelopment contaminated sediments web page. Please ensure that these costs are included or explain your assumptions if you believe these costs are not needed.

AECOM Response: Correct, Veolia intends to incorporate the RADR within the RAOR. The estimated costs for the RADR and remedial actions (if chosen) are included in the CAPU.

4. Following the completion of all necessary remedies, preparation of a closure request packet would be appropriate. Please ensure that these estimated costs are included or explain your assumptions if these costs are not needed.

AECOM Response: The estimated costs for the preparation of the case closure are included in the CAPU.

5. The remedy to address risk for residual soil with Hg concentrations > GWRCL was stated as inclusion of the site on

soil GIS. However, based upon Figure 7 of the 2/28/23 *Summary Site Investigation Report*, the areas depicted with residual soil Hg impacts > GWRCL are either unclear or incorrect since they do not appear to include areas of the DUs not excavated but with the potential to have Hg GWRCL exceedances as shown on the figure (Hg soil sample concentrations in yellow, figures 5 & 6, same report as above). This also includes, for example, off-site in the Mineral Springs Drive ROW where the concentration of Hg is > GWRCL east of the street at DU3-SE3A. This would require ROW notification for case closure and likely a potential offsite impact notification to the adjacent property as part of the remedy to address soil with impacts above GWRCLs. Residual mercury contamination resulting from air deposition may require additional off-property investigation in the future. Please ensure that the Remaining Work and associated estimated costs related to any remaining on- or off-site soil impacts are included or explain your assumptions if these costs are not needed.

AECOM Response: Based on the comments above, Veolia has update the CAPU and included estimated costs for possible additional site investigation in the area of DU3.

6. Based on these comments regarding the Remaining Work and associated assumptions, the CAPU should be updated. We request that you provide the updated CAPU long with the FA Report due by June 1 (see Condition 19).

For convenience I have attached the department's 2020 and 2022 license modification letters reflect the license conditions referred to in this email.

These comments were developed in consultation with Adam McIheran, who recently replaced Candace Sykora as our RR Program's project manager for this project. Please feel free to direct technical questions regarding the scope of the Remaining Work directly to Adam. Please cc me on these communications.

Regards,

Doug

Doug Coenen, P.E.

Hazardous Waste Engineer

Cell: 608-843-2160

douglas.coenen@wisconsin.gov

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From: Linnemanstons, Leo <Leo.Linnemanstons@aecom.com>

Sent: Friday, March 01, 2024 4:22 PM

To: Coenen, Douglas W - DNR <Douglas.Coenen@wisconsin.gov>; Sykora, Candace A - DNR

<Candace.Sykora@wisconsin.gov>

Cc: Justin Provo <justin.provo@veolia.com>; Matthew Scudder <matthew.scudder@veolia.com>; Kulinski, Courtney

<Courtney.Kulinski@aecom.com>; Schultz, Tory <Tory.Schultz@aecom.com>

Subject: Veolia ES Mineral Springs Facility (FID# 246076050) - Corrective Action Plan Update (2023)

CAUTION: This email originated from outside the organization.

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On behalf of Veolia ES Technical Solutions, LLC (Veolia), AECOM is submitting electronically PDF copy of the *Corrective Action Plan Update 2023* (CAPU 2023) for their facility located at 1275 Mineral Springs Drive in Port Washington, Wisconsin. This CAPU provides a description of the remedial actions, investigative results, and monitoring activities for the period through December 1, 2023.

We also want to inform you that Veolia's representative is now Justin Provo for the Mineral Springs Facility, and his contact information is as follows:

Justin Provo, EHS Manager
VEOLIA ES Technical Solutions, LLC
1275 Mineral Springs Drive
Port Washington, WI 53074
Cell: 262-225-1043
justin.provo@veolia.com

As required for the CAPU, we have also attached an Excel spreadsheet file of the estimated costs for the remaining corrective actions. These documents were also submitted electronically through the WDNR RR Portal.

If you have any questions or comments about the Corrective Action Plan Update, please contact me at (608) 828-8208.

Leo B. Linnemanstons, P.G. (WI)
Senior Project Hydrogeologist, Environment D
+1-608-828-8208
M +1-608-658-6700
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Appendix B – Wisconsin Department Natural Resources, SIR Technical Review Letter, June 22, 2023



June 22, 2023

Jacob Murn
Veolia ES Technical Solutions, LLC
700 E. Butterfield Road, Suite 201
Lombard IL 60148

SUBJECT: **SIR Technical Review**
Veolia Mineral Springs Facility located at
1275 Mineral Spring Drive, Port Washington, WI 53074
BRRTS# 02-46-563238,

Dear Mr. Murn:

The Wisconsin Department of Natural Resources (DNR) received the Site Investigation Report (SIR) on February 28, 2023. The SIR was developed to address previous site investigations and to present the results of current site investigations activities. On behalf of Veolia ES Technical Solutions, LLC (Veolia), AECOM is requesting a formal review/ technical assistance letter regarding the past and current remedial activities and proposed future remediations.

The contaminant of concern (COC) at the site is mercury. Site investigation activities have been completed between 2014 and 2022 to characterize the extent and magnitude of mercury impacts. A total of six discrete and four ISM sampling events have been conducted over the past eight years. AECOM concludes the following:

- Soil samples delineated extent and magnitude of residual mercury impacts greater than the Direct Contact (DC) Residual Contaminant Level (RCL). Subsequently, four soil removal actions addressed soil impacts exceeding the DC RCL.
- Remaining residual mercury impacts greater than the Groundwater Protection (GW) RCL are limited to surface soils less than six inches deep and are limited to the north, south and west site boundaries. GW RCL exceedances along the east site boundary are limited to shallow soils in three isolated locations.
- Four rounds of groundwater sampling confirmed that groundwater at the site does not have mercury impacts. The groundwater sampling network was sampled from 2020 to 2022 and included seven monitoring wells screened at the water table.
- Sediment samples were collected from the storm pond. Samples successfully delineated the extent of Midpoint Effect Concentration (MEC) exceedances. Sediment samples collected from the storm pond grid exceeded the MEC of 00.64 mg/kg at three locations. SS1, SS3, and SS7, near the southern edge of the storm pond in depth to 0.5 feet below ground surface (bgs).
- Based on the nature of contaminants and the facility operations, further evaluation or investigation for vapor investigation or emerging contaminants (PFAS and 1,4 dioxane) is not necessary.

Based on these conclusions AECOM has the following recommendations:

- Two years of groundwater monitoring has indicated no detectable mercury concentrations, groundwater monitoring should be discontinued. Annual water levels should continue to be collected until the facility is closed. If groundwater is required as part of the facility closure plan, then the monitoring wells will be available for sampling.
- Soil sampling indicates that soil exceeding DC RCL has been removed and the extent of soil exceeding GW RCL is limited, no further investigation is needed. While isolated areas have GW RCL exceedances in soil, groundwater monitoring results have demonstrated that the groundwater pathway is incomplete. Because soil impacts have already been addressed and groundwater has not been impacted, evaluation of remedial alternatives are not necessary for soil and or groundwater.
- Sediment impacts greater than the MEC have been delineated to the south end of the storm pond in the generally shallow intervals, no further investigation is needed. Based on this information a remedial actions options report (RAOR) will be prepared to develop and evaluate potential remedial alternatives to address the areas of residual.

After reviewing the above documents, the DNR has the following conclusions, recommendations and or questions regarding past and current site investigations and remedial actions:

Soils

- The DNR agrees soils at the site have been evaluated to characterize the extent and magnitude for mercury impacts. Remedial actions have included excavations to address exceedances. Confirmation sampling has confirmed the excavations were successful in eliminating those exceedances.
- While the DNR agrees mercury impacts exceeding GW RCLs are limited to DU-3 (SE2, SE1, SE3), DU4-T1-1, and DU4-T3-6 prior to closure these areas will require additional evaluation to prevent migration to groundwater.

Groundwater

- Based on current and previous sampling results, the DNR agrees, residual mercury impacted soils is not adversely impacting groundwater at the facility. Groundwater monitoring may be discontinued.
- The DNR does recommend keeping monitoring wells at the site for annual water level collections and for final closure.

Sediment

- The DNR agrees that sediment impacts have been delineated in the storm pond and are generally shallow. While additional investigation is no longer needed a RAOR should be submitted to develop and evaluate remedial alternatives for the remaining mercury impacted sediments on the southern portion of the storm pond.

Emerging Contaminates & Vapor Intrusion Assessment

- Based on groundwater results at the site and the residual impacts of mercury, the department agrees that mercury impacts do not pose a vapor intrusion risk at the site.

- The DNR has acknowledged the scoping statement regarding emerging contaminants assessment. Please note that this assessment/scooping is a requirement at the time of closure. Reference to this assessment will satisfy that requirement.

This review was completed based on the submitted document referenced above. The DNR appreciates your participation identifying and reducing the environmental impacts at your site the SIR is hereby approved. If you wish to have a meeting to discuss the above review, comments and or have any questions or concerns please let me know and a virtual option can be set up upon request. Please feel free to contact me any time,

Sincerely,

A handwritten signature in black ink that reads "Candace Sykora". The signature is fluid and cursive, with the first name "Candace" and last name "Sykora" clearly distinguishable.

Candace Sykora
Hydrogeologist
Remediation & Redevelopment
Wisconsin Department of Natural Resources
890 Spruce St, Baldwin, WI 54002
Phone: 715-928-0452
Candace.sykora@wisconsin.gov

Appendix C – Impacted Sediment Removal Action Cost Estimate

Corrective Action Plan Update 2023 - Assumed Sediment Removal Remedy (Storm Pond)

2024 Inflation Factor 1.0741

2024								
Task	HOURS	2023 LABOR	2024 LABOR	2023 SUBCONTRACTORS	2024 SUBCONTRACTORS	2023 ODCS	2024 ODCS	ADJUSTED SUBTOTAL
Pre-Design Investigation	10	\$1,100	\$1,182	\$0	\$0	\$916	\$984	\$2,165
Treatability Testing	170	\$15,500	\$16,649	\$3,206	\$3,444	\$6,527	\$7,011	\$27,103
Waste Characterization	100	\$13,100	\$14,071	\$0	\$0	\$0	\$0	\$14,071
Mobilization/Site Preparation	270	\$29,000	\$31,149	\$111,075	\$119,305	\$30,574	\$32,840	\$183,294
Sediment Management Area Preparation	400	\$39,900	\$42,857	\$53,934	\$57,931	\$43,220	\$46,473	\$147,260
Sediment Make Down Unit	20	\$2,700	\$2,900	\$27,711	\$29,765	\$78,210	\$84,006	\$116,671
Dredging/ Water Mgmt	470	\$46,200	\$49,623	\$86,836	\$93,307	\$57,713	\$61,990	\$204,920
Dewatering/ Waste Charterization	240	\$25,800	\$27,712	\$1,947	\$2,091	\$241,646	\$259,582	\$289,385
Dewatered Sediment Transport & Disposal	470	\$46,700	\$50,160	\$23,818	\$25,583	\$27,940	\$30,011	\$105,754
Sediment and Surface Water Confirmation Sampling	60	\$6,600	\$7,089	\$0	\$0	\$1,272	\$1,366	\$8,456
Demobilization/Restoration	170	\$17,800	\$19,119	\$2,519	\$2,706	\$13,970	\$15,005	\$36,830
Project Management	100	\$15,000	\$16,112	\$0	\$0	\$0	\$0	\$16,112
TOTAL	2410	\$252,840	\$278,622	\$271,490	\$334,132	\$437,270	\$539,267	\$1,152,021

Cost Estimate Assumptions:

AECOM prepared this cost estimate based on the assumptions presented on the following sheet.

Subcontractor and Other Direct Costs (ODCs) are estimated based on actual quotations or bid units from similar work in the United States in 2022.

Hourly labor units based on AECOM's experience performing similar work in the United States.

Subcontractor and ODCs based on AECOM's understanding of average unit costs multiplied by their estimated number of units.

Inflation increases were applied in general accordance with WAC NR664.0144(2)

Corrective Action Plan Update 2023 - Assumed Sediment Removal Remedy (Storm Pond)- SUBCONTRACTORS

2024 Inflation Factor 1.0741

2024						
Task	QTY	UNIT	2023 COST	2024 COST	ADJUSTED SUBTOTAL	NOTES
Assorted Equipment and Supplies	Variable	Variable	Variable	Variable	\$69,126	
Skid Steer	39	Day	\$299	\$321	\$12,505	
Excavator	25	Day	\$622	\$668	\$16,709	
Telehandler	25	Day	\$378	\$406	\$10,147	
Make-Down Unit	1	Month	\$15,115	\$16,235	\$16,235	Includes mobilization and piping
Chemical Conditioning	1	Service	\$12,596	\$13,529	\$13,529	Assumed to 150ppm
Laboratory					\$3,444	
Analytical Testing	1	Total	\$3,206	\$3,444	\$3,444	Treatability Testing
	1					
Water Management					\$48,165	
(2) 6" Diesel Pumps	4	Month	\$3,023	\$3,247	\$12,988	Rental per pump per month
(2) Layflat- Hose or pipe	4	Month	\$5,668	\$6,088	\$24,353	Rental per hose per month
Mobilization and Fees	1	Total	\$10,077	\$10,824	\$10,824	
Dredging					\$213,360	
Mobilization	1	Total	\$94,471	\$101,471	\$101,471	Floating pipe, hard pipe and valves included
Crane	1	Total	\$25,192	\$27,059	\$27,059	
Dredging Daily Rate	6	Total	\$12,596	\$13,529	\$81,177	
Generator	1	Total	\$1,512	\$1,624	\$1,624	
Geotechnical Laboratory	1	Total	\$1,889	\$2,029	\$2,029	Waste Characterization
Project Estimated Total- Subcontractors					\$334,095	

Cost Estimate Assumptions:

AECOM prepared this cost estimate based on the assumptions presented on the following sheet.

Subcontractor and Other Direct Costs (ODCs) are estimated based on actual quotations or bid units from similar work in the United States in 2022.

Hourly labor units based on AECOM's experience performing similar work in the United States.

Subcontractor and ODCs based on AECOM's understanding of average unit costs multiplied by their estimated number of units.

Inflation increases were applied in general accordance with WAC NR664.0144(2)

Corrective Action Plan Update 2023 - Assumed Sediment Removal Remedy (Storm Pond)- ODCs

2024 Inflation Factor **1.0741**

2024						
Task	QTY	UNIT	2023 COST	2024 COST	ADJUSTED SUBTOTAL	NOTES
Miscellaneous associated costs	Variable	Variable	Variable	Variable	\$93,505	
AECOMs Treatability Laboratory					\$7,035	
Weekly Lab Fee	8	Weeks	\$189	\$203	\$1,624	
Supplies	1	Each	\$1,512	\$1,624	\$1,624	
Waste Disposal	1	Each	\$3,149	\$3,382	\$3,382	
Sample shipping	4	Each	\$94	\$101	\$406	
Sediment Management Area Costs					\$423,714	
Berm Material- Cement Block	115	Each	\$224	\$241	\$27,700	Rental for 1 month (4' Long, 3' High Barriers)
Berm Material- Freight/ Taxes	1	Total	\$6,264	\$6,728	\$6,728	All mobilizations
Nonwoven Geotextile Fabric 160'x70'	1	Total	\$2,664	\$2,861	\$2,861	
Geotextile Tubes 60'x120' (2)	1	Total	\$9,639	\$10,354	\$10,354	
Freight	1	Total	\$2,512	\$2,698	\$2,698	For Geo Tubes, liner, non-woven fabric
40 mil Liner	1	Each	\$9,057	\$9,728	\$9,728	
Erosion and Sediment Control	1	Total	\$6,280	\$6,745	\$6,745	Silt fence or mulch sock
Site Supplies	1	Total	\$6,280	\$6,745	\$6,745	Portojohn, PPE, 30 CY Dumpster, Misc
Tipping Fees	2,200	Ton	\$76	\$81	\$178,512	
Trucking Costs	2,200	Ton	\$28	\$30	\$65,454	
Fuel	72	Day	\$201	\$216	\$15,541	Fuel per day per each piece of equipment
Calciment (10%) Delivered	193	Ton	\$340	\$365	\$70,466	
Polymer	500	Gallon	\$38	\$40	\$20,182	
Confirmation Sampling					\$1,366	
Sediment Samples	16	Each	\$38	\$41	\$649	
Surface Water Samples	6	Each	\$38	\$41	\$244	
Supplies	1	Each	\$252	\$271	\$271	
Sample shipping	2	Each	\$94	\$101	\$203	
Project Estimated Total- ODCs					\$525,620	

Cost Estimate Assumptions:

AECOM prepared this cost estimate based on the assumptions presented on the following sheet.

Subcontractor and Other Direct Costs (ODCs) are estimated based on actual quotations or bid units from similar work in the United States in 2022.

Hourly labor units based on AECOM's experience performing similar work in the United States.

Subcontractor and ODCs based on AECOM's understanding of average unit costs multiplied by their estimated number of units.

Inflation increases were applied in general accordance with WAC NR664.0144(2)

Veolia Mineral Springs -

Assumptions about Sediment Removal Cost Estimate

- Assume inorganic mercury (Hg) is present and that if solids are managed the Hg will stay with the solids and it won't be released in the water via the filtrate;
- Assume the selected dredge prism will remove the majority of Hg;
- Assume that dredging will occur and then assume confirmation surficial sampling will occur to confirm the Hg concentration is below the criteria (.64 mg/kg or 640 ppb);
- Assume no capping of remaining Hg is necessary;
- Assume that no water treatment required;
- Assume that filtrate will be pumped back to pond;
- Assume that parking lot (68'*160') can be used for Sediment Management Area (SMA);
- Assume SMA lined with 40 HDPE liner;
- Assume build the sides of the SMA Up & that no cut/ fill is required;
- Assume utilization of (2) circumference 60*120' tubes (25' wide);
- Assume SMA has water volume capacity of 40,000 gallons at 2' deep;
- For Treatability Testing, assume that the following will be performed: geotextile tube dewatering testing, chemical conditioning and efficacy, T&D efficacy - S/S testing and evaluate against T&D criteria;
- Assume only reagent used for S/S (solidification/ stabilization) is Calciment (assumed as 10%);
- Assume that the stabilized filter cake and filtrate will have to be measured for Hg during treatability via TCLP;
- Assume that sufficient sump, pipe, and pipelines & 4" submersibles or (2) 6" diesel pumps;
- Assume no topographic or bathymetric survey(s) are needed;
- Assume water will be supplied via adjacent fire hydrant on-site at no additional cost;
- Assume no utilities conflict with construction. This includes overhead powerlines & buried utilities. Assume to have access to pond for dredge launch;
- Assume pond has no outfall (no turbidity curtains are needed);
- Assume that other than EST from the county that no other permits are required;

Assumptions about Sediment Removal Cost Estimate- ODCs

- Assume project duration of about 32 days (varying amount of personnel per day per task);
- Assume enough fuel to provide 2-3 pieces of equipment for about 32 days;
- Assume enough berm material (jersey barriers) to cover an approximate 460-foot perimeter
 - Berms are 4 feet long and 3 feet high. Will need 115 berms = 460/4
- Assume dewatered sediment and tube material can go to landfill together;
- Amount of Calciment needed as calculated:
 - Calciment delivered: $1,286\text{CY} \times .1 \text{ (10\% Calciment)} \times 1.5 \text{ Specific Gravity} = 193 \text{ Tons}$
- Assume AECOM will negotiate with local landfills for tipping fees. Assume \$66/ ton for tipping fees;
- And assume dredging of 1,286 CY of sediment out of the southwest quadrant of the pond at the facility.
 - Sediment disposal: $1,286\text{CY} \times 1.14 \text{ (10\% Calciment)} \times 1.5 \text{ Specific Gravity} = 2200 \text{ Tons}$

Assumptions about Sediment Removal Cost Estimate- Subcontractors

- Assume dredging contractor will provide floating pipe in pond, hard pipe to SMA, manifold, injection/sample ports, and valves for quoted price for mobilization;

Appendix D – Updated Corrective Action Cost Estimates

PROJECT: Veolia ES Technical Services, LLC
DATE: 5/31/2024

AECOM Project No.
60706003

Corrective Action Plan Update 2023 - Remaining Estimated Costs

	2022	2023	2024	2025
Groundwater Monitoring	Completed	--	--	--
Additional Sediment Investigation	Completed	--	--	--
Site Investigaiton Summary Report	--	Completed	--	--
Supplemental Site Investigation	--	--	\$26,662	--
Remedial Action Options Report	--	--	\$20,602	--
Implement Sediment Remedy (if needed)	--	--	--	\$1,152,021
Case Closure Request	--	--	--	\$9,975
Corrective Action Total		\$0	\$47,264	\$1,161,996
10% Contingency		\$0	\$4,726	\$116,200
Grand Estimated Total		\$0	\$51,990	\$1,278,195

(a)

Grand Total
\$1,209,260
\$120,926
\$1,330,186

(a) Estimated cost for potential sediment remedy is presented in Attachment C of the 2023 Corrective Action Plan Update. This sediment remedy estimated cost was conservatively developed assuming the need for a possible removal action for mercury impacted sediments. The sediment investigation was completed in 2022; evaluation of a sediment remedy is anticipated in 2024 and implementation of a remedy, if necessary, in 2025. Inflation increases were applied in general accordance with WAC NR664.0144(2)

Corrective Action Plan Update 2023 - Sediment Remedial Action Options Report (RAOR)2024 Inflation Factor **1.0741**

2024

RAOR	QTY	UNIT	2023 COST	2024 COST	ADJUSTED SUBTOTAL
Technical Staff Labor (ave rate)	80	HR	\$143	\$154	\$12,300
CADD figure prep (ave labor)	20	HR	\$115	\$123	\$2,460
Administrative assistance (ave labor)	10	HR	\$80	\$86	\$861
WDNR required review fees	1	LS	\$1,202	\$1,291	\$1,291
Project Management and Oversight	20	HR	\$172	\$184	\$3,690
					\$20,602

Assumptions:

Hourly labor units based on AECOM's experience performing similar work for other clients.

Unit costs are based on AECOM's understanding of average costs for the respective units in southeastern Wisconsin.

Technical staff labor includes development of remedial alternatives, detailed assessment of alternatives, and cost estimating the selected remedy.

CADD figure preparation is presenting the site conditions, impacted area, and remedial alternatives.

Administrative assistance for word processing, document reproduction, settlement of fees, mailing, etc

Project Management includes invoice review, procurement, and quality control/quality assurance reviews.

Inflation increases were applied in general accordance with WAC NR664.0144(2)

Corrective Action Plan Update 2023 - Supplemental Site Investigation DU3

2024 Inflation Factor 1.0741

2024										
Task	QTY	UNIT	2023 Rate	2024 Rate	Adjusted Labor	2023 SUBS	2024 SUBS	2023 ODCS	2024 ODCS	ADJUSTED SUBTOTAL
Technical Staff Workplan Preparation (avg rate)	20	HR	\$150	\$161	\$173					\$3,222
CADD workplan figure prep (ave labor)	8	HR	\$100	\$107	\$115					\$859
Techncial Staff Labor (ave rate)	20	HR	\$125	\$134	\$144					\$2,685
CADD figure prep (ave labor)	8	HR	\$100	\$107	\$115					\$859
Technical Staff Report Preparation (avg rate)	25	HR	\$150	\$161	\$173					\$4,028
Adminstrative assistance (ave labor)	8	HR	\$70	\$75	\$81					\$601
Project Management and Oversight	30	HR	\$150	\$161	\$173					\$4,833
WDNR Fees	1	EACH						\$2,150	\$2,309	\$2,309
Drilling (subcontractor)	1	EACH				\$4,000	\$4,296			\$4,296
Laboratory Soil Samples	32	EACH						\$34	\$37	\$1,169
Sampling Supplies	1	EACH						\$100	\$107	\$107
Waste Disposal	1	EACH						\$1,500	\$1,611	\$1,611
Sample Shipping	1	EACH						\$75	\$81	\$81
TOTAL				\$908	\$975	\$4,000	\$4,296	\$3,859	\$4,145	\$26,662

Cost Estimate Assumptions:

AECOM prepared this cost estimate based on the assumptions presented on the following sheet.

Subcontractor and Other Direct Costs (ODCs) are estimated based on actual quotations or bid units from similar work in the United States in 2023.

Hourly labor units based on AECOM's experience performing similar work in the United States.

Subcontractor and ODCs based on AECOM's understanding of average unit costs multiplied by their estimated number of units.

Inflation increases were applied in general accordance with WAC NR664.0144(2)

Corrective Action Plan Update 2023 - WDNR BRTS Case Closure2024 Inflation Factor **1.0741**

2024

Case Closure Request	QTY	UNIT	2023 COST	2024 COST	ADJUSTED SUBTOTAL
Technical Staff Labor (ave rate)	32	HR	\$143	\$154	\$4,920
CADD figure prep (ave labor)	16	HR	\$115	\$123	\$1,968
Administrative assistance (ave labor)	8	HR	\$80	\$86	\$689
WDNR required review fees	1	LS	\$1,546	\$1,660	\$1,660
Project Management and Oversight	4	HR	\$172	\$184	\$738
					\$9,975

Assumptions:

Hourly labor units based on AECOM's experience performing similar work for other clients.

Unit costs are based on AECOM's understanding of average costs for the respective units in southeastern Wisconsin.

Technical staff labor includes closure application form completion, data table summary compilation, property documentation (deed and zoning), and notifications.

CADD figure preparation is for required updates for inclusion in case closure application and preparation of additional required figures.

Administrative assistance for word processing, document reproduction, settlement of fees, mailing, etc

Project Management includes invoice review, procurement, and quality control/quality assurance reviews.

Inflation increases were applied in general accordance with WAC NR664.0144(2)

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Appendix HH

Contingency Plan Quick Reference Guide

Contingency Plan Quick Reference Guide [NR 662.262(2) Wis. Adm. Code]

**Veolia ES Technical Solutions, LLC
1275 Mineral Springs Drive
Port Washington, WI 53074
EPA ID #WID988566543**

Introduction

In accordance with 40 CFR 662.262(2), a Quick Reference Guide to the Hazardous Waste Contingency Plan (Plan) is provided below that summarizes key response information related to the Plan. A copy of the Quick Reference Guide shall also be provided to emergency responders listed in the distribution list at the beginning of this Plan.

Name and Contact Information for Emergency Coordinators (NR 662.262(2)(h))

Name	24-Hour Phone	Work Phone	Title
Primary Emergency Coordinator			
Matthew Scudder	(262) 416-8061	(262) 243-8917	Operations Supervisor
Alternative Emergency Coordinators			
Justin Provo	(262) 225-1043	(262) 243-8908	EHS Manager
Nicolas Bonvicini	(262) 416-5766	(262) 243-8911	Operations Supervisor
Michael Grittner	(414) 313-8086	(262) 243-8940	Operations Supervisor

Identification of On-site Notification Systems (NR 662.262(2)(g))

The Veolia Port Washington facility employs a fire alarm system to initiate evacuation of the plant. The fire alarm panel is monitored by HSM Security for alarms of halon gas fire suppression system and water sprinkler system. The office areas are also monitored by smoke alarms.

Location of Water Supply (NR 662.262(2)(f))

Water supply for fire suppression enters the main building from the east. The closest fire hydrants are numbered and are located: #381 east corner Mineral Springs Drive and Maritime Drive; #19199 south of facility on north side of Maritime Drive; and #386 east of facility on east side of Mineral Springs Drive. According to the City of Port Washington Water Department, the modeled flow rate of the fire hydrants is 3,500 gallons per minute.

Identification of Types and Names of Hazardous Waste Present (NR 662.262(2)(a)) and the Estimated Maximum Amount of Hazardous Waste (NR 662.262(2)(b))

Waste Types and Names	Hazards	Amount
Hazardous wastes in storage rooms consisting of mercury-containing articles (e.g., thermometers, thermostats), mercury-contaminated debris, mercury-contaminated soils and waters, dental amalgam, mercury compounds (e.g., mercury chloride, mercury oxide).	Corrosive Toxic – Mercury	20,000 gallons
Household hazardous wastes consisting of flammable paints, ignitable solvents, aerosol cans, pesticides, herbicides, acids, and base cleaning compounds.	Flammable Corrosive Toxic	1,730 gallons (approx. 31, 55-gallon drums)
Hazardous waste generated from recycling light bulbs - white phosphor powder.	Toxic – Mercury	1,595 gallons (approx. 29, 55-gallon drums)
Hazardous waste generated from mercury recycling operations, including mercury, debris, water, and lead containing glass.	Toxic – Mercury, Lead	1,595 gallons (approx. 29, 55-gallon drums)

All waste is stored in Department of Transportation specification packaging.

Hazardous Waste Requiring Unique/Special Treatment (NR 662.262(2)(c))

Exposure to mercury without respiratory protection should result in personnel having blood and urine monitored for mercury.

Map Showing Where Hazardous Wastes are Generated Accumulated or Treated at the Facility and Access Routes (NR 662.262(2)(d)) – Drawing D-3 Facility Layout

- ◆ Permitted for a maximum of 20,000 gallons of hazardous waste located inside three storage rooms (Green Areas).
- ◆ Household hazardous wastes are accumulated to volumes of four cubic yard boxes, six 55-gallon drums and smaller pails. The accumulation area is directly west of the overhead door located on the east side of the building (Blue Areas).
- ◆ Hazardous waste white phosphor powder generated from recycling light bulbs. Accumulated at point of generation next to lamp machine in 55-gallon drums (Orange Areas) and then moved to accumulation area adjacent to the household waste (Blue Areas).
- ◆ Hazardous waste generation from mercury recovery operations are accumulated at point of generation in the retort room (Pink Area) in 55-gallon drums and cubic yard boxes and then moved to accumulation area adjacent to the household waste (Blue Areas).

Map of Facility and Surrounding to Identify Access and Evacuation (NR 662.262(2)(e)) – Drawing D-4 Area Street Map

- ◆ Veolia facility: Green Area
- ◆ Access roads: Mineral Springs Drive, Maritime Drive - Orange Areas
- ◆ Businesses: Blue Highlight Areas
- ◆ Residential: Pink Highlight Area
- ◆ Fire Hydrant: Red Circles

Appendix II

Master Job Position List

Master Job Position List

Required training is sorted depending on the job position, function, and assigned tasks associated with hazardous waste-related activities.

Job Title	Job Class I
Accounting Coordinator	I
Administrative Assistant	I
Controller	I

Job Title	Job Class II
Environmental Health & Safety Manager	II
Environmental Health & Safety Specialist	II
Operations Manager	II
Receiving Lead	II
Technical Customer Advisor	II
Technical and Regulatory Specialist	II

Job Title	Job Class III
Inventory Control Specialist	III
Maintenance Mechanic	III
Material Handler I, II, and III	III
Operations Supervisor	III

Appendix JJ

Training Matrix

Training Matrix

Key: R - Required
 JS - Job Specific
 N/A - Not Applicable

Training Courses	Initial Training	Retraining	Job Class I	Job Class II	Job Class III
Department of Transportation (DOT)					
DOT: HM General Awareness and Familiarization	X	Every 3-Years	N/A	JS	R
DOT: HM Function Specific - Hazard Classification Table	X	Every 3-Years	N/A	JS	R
DOT: HM Function Specific - Packaging	X	Every 3-Years	N/A	JS	R
DOT: HM Function Specific - Marking and Labeling	X	Every 3-Years	N/A	JS	R
DOT: HM Function Specific - Placarding	X	Every 3-Years	N/A	JS	R
DOT: HM Function Specific - Shipping Papers	X	Every 3-Years	N/A	JS	R
DOT: HM Function Specific - Loading/Unloading (Non-Bulk)	X	Every 3-Years	N/A	JS	R
DOT: HM Function Specific - Chemical Segregation	X	Every 3-Years	N/A	JS	R
DOT: HM Function Specific - Safety Training	X	Every 3-Years	N/A	JS	R
DOT: HM Function Specific - Special Permits	X	Every 3-Years	N/A	JS	R
DOT: HM Function Specific - ERG Book	X	Every 3-Years	N/A	JS	R
DOT: HM Function Specific - Incident Reporting	X	Every 3-Years	N/A	JS	R
DOT: HM Security Awareness	X	Every 3-Years	N/A	JS	R
DOT: HM Security In-Depth	X	Every 3-Years	N/A	JS	R
Occupational Health and Safety Administration (OSHA)					
OSHA: Hazwoper 40-Hour	X	N/A	N/A	JS	R
OSHA: Hazwoper 8-Hour	X	Annually	N/A	R	R
Spill Response/Work Zones	X	Annually	N/A	R	R
OSHA: Bloodborne Pathogen - Training	X	Annually	N/A	R	R
OSHA: Confined Spaces - General Awareness	X	Annually	N/A	R	R
Confined Space Entry/Non-Entry Rescue	X	Annually	N/A	R	R
OSHA: Control of Hazardous Energy - Affected	X	Annually	N/A	R	R
OSHA: Compressed Gas Safety	X	Annually	N/A	R	R
OSHA: First Aid and CPR	X	every 2-Years	N/A	JS	JS
OSHA: Fire Prevention	X	Annually	N/A	R	R
OSHA: Fire Extinguisher	X	Annually	R	R	R
OSHA: Flammable and Combustible Liquids	X	Annually	N/A	R	R
OSHA: Hazard Communication	X	Annually	R	R	R
OSHA: Hot Work - General Awareness	X	N/A	N/A	JS	JS
OSHA: Incident Reporting and Investigation	X	Annually	R	R	R
OSHA: Ladder Safety	X	N/A	N/A	R	R
OSHA: Personal Protective Equipment	X	Annually	N/A	R	R
OSHA: Powered Industrial Truck - Forklift	X	Every 3-Years	N/A	JS	JS
OSHA: Powered Industrial Truck - Pallet Jack	X	Every 3-Years	N/A	JS	JS
OSHA: Respirator - Air-Purifying Fit Testing	X	Annually	N/A	JS	R
OSHA: Respirator - Air-Purifying Training	X	Annually	N/A	JS	R
OSHA: Static Electricity (Grounding and Bonding)	X	Annually	N/A	R	R
OSHA: Supplied Air Breathing Apparatus	X	Annually	N/A	JS	R

Training Matrix (continued)

Training Courses	Initial Training	Retraining	Job Class I	Job Class II	Job Class III
OSHA: Radiation/Biohazard Awareness	X	Annually	N/A	R	R
OSHA: Toxicology	X	Annually	N/A	R	R
OSHA: Confined Space Entry/Non-Entry Rescue	X	Annually		JS	JS
OSHA: Safety Orientation - Office	X	N/A	R	R	R
OSHA: Safety Orientation - Technical and Operations		N/A	NA	R	R
Facility Training (SOPs and OTJs)					
SPCC Plan	X	Annually	N/A	JS	R
Contingency Plan	X	Annually	R	R	R
Contingency Plan Drill (Facility)	X	Annually	R	R	R
Storm Water Management	X	Annually	N/A	JS	R
Emergency Coordinator	X	As Needed	NA	JS	JS
RCRA daily and weekly inspection	X	As Needed	NA	JS	JS
Facility Layout (fire extinguishers, eyewash/showers/spill kits, First aid kit locations)	X	N/A	R	R	R
Alarm System Operation	X	As Needed	NA	JS	JS
Mercury Retort Processing	X	As Needed	NA	JS	JS
Flourescent Lamp Processing	X	As Needed	NA	JS	JS
Lamp Crushing Procedure	X	As Needed	NA	JS	JS
Thermostat Recycling Procedures	X	As Needed	NA	JS	JS
Waste Receiving Operations	X	As Needed	NA	JS	JS
VNA Loading and Unloading Policy	X	As Needed	NA	JS	JS
ERD Inventory Process	X	As Needed	NA	JS	JS
Sampling	X	As Needed	NA	JS	JS

Appendix KK

TSDF License Checklist

WISCONSIN DEPARTMENT OF NATURAL RESOURCES

HAZARDOUS WASTE LICENSE APPLICATION (FPOR) CHECKLIST

CONTAINER UNITS, TANK SYSTEMS, AND MISCELLANEOUS UNITS

Instructions

This checklist should be completed and submitted with any Feasibility and Plan of Operation Report (FPOR), to assist in determining if the FPOR contains the minimum information required by ch. NR 670, Wis. Adm. Code, and certain other information that is needed that the department uses to process and review the application. For each item, the applicant should indicate the specific location of the required information within the FPOR, or "NA" if the item is not applicable to the application. This location should be specific enough to easily locate the entry (e.g. do not only say "App. B", or "Section 7", if Appendix B or Section 7 has multiple pages). The applicant may add clarifying comments in the column provided. Note that this excel file contains multiple worksheets that may apply.

In general, this checklist itemizes the minimum information required for an FPOR that is identified in NR 670.010 - NR 670.027; in some sections, certain requirements in NR 664 have been included. Furthermore, Part 1, General Requirements, Section O lists other information to assist the department in processing the application and initiating the review.

In addition to the minimum information identified in NR 670, the FPOR should also address the applicable requirements of NR 664, and describe how they will be achieved, even if they are not spelled out in this checklist. For example: (a) the training program required in NR 670.014(2)(L) should address all of the training-related requirements in NR 664.0016, and (b) the FPOR should address the preparedness and prevention requirements in NR 664.0030 through 664.0037.

This checklist is intended to assist an applicant in developing an FPOR. It may be incomplete and/or imprecise, and does not supersede or otherwise affect the requirements in NR 600 through NR 679.

The wording in the first column (Information Required) is intended to provide only a brief summary of the content of the regulation that is cited. The applicant should always review the text of the cited code section itself to make sure that the FPOR addresses the requirement.

Please complete the following information, which will automatically populate headings in the other worksheets.

Facility Name:	Veolia ES Technical Solutions, LLC
FID # :	246076050
US EPA ID #:	WID988566543
FPOR Date:	April 8, 2025

Items to include with FPOR submittal	Supplied w/ FPOR submittal package (Y/N)	Applicant Comments	Additional Instruction
Transmittal letter: the letter must refer to the date of the FPOR, and indicate if the FPOR is replacing a previous submittal.	Yes		
WDNR WAP example with tracked-change, in Word format.	Yes		
WDNR License Checklist, in Excel format.	Yes		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
Section A. General Requirements NR 670.010 to NR 670.014			
A.1. Two copies of license application submitted. NR 670.010(1)	NA	Two copies will be submitted once draft is finalized by WDNR and Veolia.	Digital submittal may be appropriate. Please check with the department.
A.2. Appropriate plan review and license fees submitted. NR 670.010(12)	NA	Appropriate plan review and fees will be submitted.	The department issues an invoice for this payment after FPOR submittal
A.3. Report signed by a president, secretary, treasurer or vice president of a corporation or other approved signatory. NR 670.011(1)	Included after the Transmittal Letter		In most cases, this will be the operator's signature.
A.4. Signature includes certification statement. NR 670.011(4)	Included after the Transmittal Letter		
A.5. Claims of confidentiality are met. NR 670.012	NA	VESTS is not claiming any confidentiality.	
A.6. Summary of pre-application meeting, list of attendees/addresses and copies of written comments or materials submitted during meeting. NR 670.014(2)(v)	FPOR Section 1.2	Historical information is included	New facilities, and Class 3 modifications.
A.7. Documentation showing compliance with local approval requirements. NR 670.014(2)(w)	FPOR Section 1.3	Historical information is included	New facilities, and expansions.
A.8. Complete Part A application. NR 670.013	Appendix D		Part A Form must be accompanied by EPA 8700-12 "Site Identification Form"
A.9. Technical data, such as design drawings and specifications and engineering studies are certified by WI registered PE. NR 670.014(1); additional authority is established in 289.24(1) and 289.30(4), Wis. Stats.	Drawing D-6 Storage Pod Floor Cross Section Appendix Q Cost of Closure Estimation Summary Appendix EE TRC Environmental Corporation Letter with MPAP		At a minimum, PE certification is required for tank system designs and certifications, closure costs, secondary containment calculations,

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
A.10. General description of facility. NR 670.014(2)(a)	FPOR Section 2.1 and Appendix MM Executive Summary		If currently licensed, this should incorporate the information included in facility description contained in the current license's approval letter(s), with updates and corrections as needed.
A.11. Description of procedures, structures or equipment used to prevent hazards in unloading operations. NR 670.014(2)(h)1.	FPOR Section 4.2.1		
A.12. Description of procedures, structures or equipment used to prevent runoff from hazardous waste handling areas or to prevent flooding. NR 670.014(2)(h)2.	FPOR Section 5.5		
A.13. Description of procedures, structures or equipment used to prevent contamination of water supplies. NR 670.014(2)(h)3.	FPOR Section 5.5		
A.14. Description of procedures, structures or equipment used to mitigate effects of equipment failure or power outages. NR 670.014(2)(h)4.	FPOR Section 5.5.3		
A.15. Description of procedures, structures or equipment used to prevent exposure of personnel. NR 670.014(2)(h)5.	FPOR Section 4.1.4		
A.16. Description of procedures, structures or equipment used to the atmosphere. NR 670.014(2)(h)6.	FPOR Section 4.5		
A.17. Traffic patterns, estimated traffic volume, traffic control, access road surfacing and load bearing capacity. NR 670.014(2)(j)	FPOR Section 2.2		
A.18. Chemical and physical analyses of the hazardous waste and debris to be handled at the facility. NR 670.014(2)(b)	FPOR Section 6.0 WAP section 3.0		
A.19. Chemical and physical analyses contains all information that must be known to treat, store or dispose of the waste according to NR 664 requirements. NR 670.014(2)(b)	FPOR Section 6.0 WAP section 3.0		
A.20. Justification of any request for a waiver of the preparedness and prevention requirements of NR 664 subch. C. NR 670.014(2)(f)	NA	VESTS is not requesting a waiver of the preparedness and prevention requirements	

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
A.21. Description of precautions taken to prevent accidental ignition or reaction of ignitable, reactive or incompatible wastes, including A.22 to A.24. NR 670.014(2)(i)	FPOR Section 5.1		
A.22. Ignitable and reactive waste is separated and protected from sources of ignition or reaction. NR 664.0017(1)	FPOR Section 5.1		
A.23. Smoking and open flame are confined to specially designated locations when handling ignitable or reactive waste. NR 664.0017(1)	FPOR Section 5.1		
A.24. "No Smoking" signs are conspicuously placed where there is a hazard from ignitable or reactive waste. NR 664.0017(1)	FPOR Section 5.1		
A.25. Documentation demonstrating compliance with A.22. to A.24., including references to published scientific or engineering literature, data from trial tests, waste analysis or the results of treatment of similar waste by similar treatment under similar operating conditions. NR 664.0017(3)	FPOR Section 5.1		
Section B. Noncompliance with Plans or Orders NR 670.014(2)(x)1.			
B.1. Identification of all persons owning $\geq 10\%$ legal or equitable interest in the applicant or their assets. NR 670.014(2)(x)1.a	FPOR Section 1.4.1		
B.2. Identification of all WI solid or hazardous waste facilities for which applicant or other identified person is named in or subject to a department order or plan approval. NR 670.014(2)(x)1.b.	FPOR Section 1.4.1		
B.3. Identification of all WI solid or hazardous waste facilities owned by the applicant or other identified person who owns or previously owned $\geq 10\%$ interest in the assets. NR670.014(2)(x)1.c.	FPOR Section 1.4.1		
B.4. Statement regarding whether or not all plan approvals and orders relating to all identified facilities are being complied with. NR 670.014(2)(x)1.d.	FPOR Section 1.4.1		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
Section C. Environmental Impact Review NR 670.014(2)(x)2.			
C.1. Purpose, history, background, relevant local, state and federal permits or approvals and zoning changes for the project. NR 670.014(2)(x)2.a.	Appendix MM Section 1		
C.2. Description of proposed physical changes related to terrestrial resources, such as soil placement, construction of roads, surface water drainage and sedimentation controls. NR 670.014(2)(x)2.b.1)	Appendix MM Section 2	No physical changes	
C.3. Description of proposed physical changes related to aquatic resources, such as impacts to streams, wetlands or other water bodies. NR 670.014(2)(x)2.b.2)	Appendix MM Section 2	No physical changes	
C.4. Description of proposed physical changes related to the construction of buildings and other structures. NR 670.014(2)(x)2.b.3)	Appendix MM Section 2	No physical changes	
C.5. Description of proposed physical changes related to air emissions and water discharges during facility construction, operation and closure. NR 670.014(2)(x)2.b.4)	Appendix MM Section 2	No physical changes	
C.6. Description of proposed physical changes related to any other changes anticipated with facility development. NR 670.014(2)(x)2.b.5)	Appendix MM Section 2	No physical changes	
C.7. Maps, plans or other materials needed to clarify the information provided for C.2. to C.6. NR 670.014(2)(x)2.b.6)	NA	No physical changes	
C.8. Description of the affects on the existing physical environment, such as topography, surface water drainage, hydrogeologic conditions, geology. NR 670.014(2)(x)2.c.1)	Appendix MM Section 3.1-3.3		
C.9. Description of the affects on existing dominant aquatic and terrestrial plant and animal species and habitats. NR 670.014(2)(x)2.c.2)	Appendix MM Section 3.5-3.6		
C.10. Description of the affects on existing land use, dominant features, and zoning in the area. NR 670.014(2)(x)2.c.3)	Appendix MM Section 2		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
C.11. Description of the affects on existing social and economic conditions, such as ethnic or cultural groups. NR 670.014(2)(x)2.c.4)	Appendix MM Section 3.8		
C.12. Description of the affects on other existing special resources, such as archaeological, historical, state natural areas, or prime agricultural lands. NR 670.014(2)(x)2.c.5)	Appendix MM Section 3.7		
C.13. Discussion of the probable adverse and beneficial physical impacts associated with facility design, construction and operation. NR 670.014(2)(x)2.d.1)	Appendix MM Section 4		
C.14. Discussion of the probable adverse and beneficial biological impacts such as destruction and creation of habitat, alteration of physical environment and impacts to endangered or threatened species. NR 670.014(2)(x)2.d.2)	Appendix MM Section 4		
C.15. Discussion of the probable adverse and beneficial impacts on land use. NR 670.014(2)(x)2.d.3)	Appendix MM Section 4		
C.16. Discussion of the probable adverse and beneficial social and economic impacts to local residents, cultural groups and communities and industries served by the facility. NR 670.014(2)(x)2.d.4)	Appendix MM Section 4		
C.17. Discussion of probable adverse and beneficial impacts on other special resources, such as archaeological, historical, state natural areas and prime agricultural lands. NR 670.014(2)(x)2.d.5)	Appendix MM Section 4		
C.18. Discussion of probable adverse impacts that cannot be avoided, such as groundwater and surface water impacts, modifications of topography, loss of agricultural or forest land, displacement of wildlife and adverse aesthetic impacts for people in and around the facility. NR 670.014(2)(x)2.d.6)	Appendix MM Section 4		
C.19. Identify, describe and discuss feasible alternatives such as taking no action, enlargement, reduction or modification of the project. NR 670.014(2)(x)2.e.	Appendix MM Section 5		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
C.20. Information to support a determination for the need for the proposed facility or expansion. as required under s. 289.28, Stats. NR 670.014(2)(x)3.; see also 289.24(1)(f)	FPOR Section 2.4	VESTS is not proposing any expansions at this time.	Each issue identified in s. 289.28(1), Wis, Stats. must be addressed.
Section D. Groundwater Protection NR 670.014(3)			
D.1. If all regulated units meet NR 664.0090(2), this Section is not applicable.	FPOR Section 2.5.1		Items in Section D are required for facilities containing a regulated unit, as defined in NR 664.0090(1)(b).
D.2. Summary of groundwater monitoring data from interim license period. NR 670.014(3)(a)	FPOR Section 2.5.3		
D.3. Uppermost aquifer and aquifers hydraulically interconnected beneath the facility property, groundwater flow direction and rate, and basis of identification. NR 670.014(3)(b)	FPOR Section 2.5.2		
D.4. Topographic map delineating waste management area, property boundary, point of compliance and proposed location of monitoring wells. NR 670.014(3)(c)	FPOR Section 2.1.2 Drawing D-2		
D.5. Description of contamination plume that entered the groundwater from a regulated unit at the time of the application, delineation of the extent of the plume on the topographic map and identification of hazardous constituent concentrations in the plume. NR 670.014(3)(d)	NA	No contamination plume has entered the groundwater.	
D.6. Detailed plans and engineering report describing the proposed groundwater monitoring program to be implemented per NR 664.0097. NR 670.014(3)(e)	NA	No contamination plume has entered the groundwater.	
D.7. If hazardous constituents have not been detected in the groundwater at the time of the license application, sufficient information, supporting data and analyses to establish a detection monitoring program which meets NR 664.0098. NR 670.014(3)(f)	FPOR Section 2.5.3		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
D.8. If hazardous constituents have been detected in the groundwater at the point of compliance at the time of the license application, sufficient information, supporting data and analyses to establish a compliance monitoring program meeting NR 664.0099. NR 670.014(3)(g)	NA	No contamination plume has entered the groundwater.	
D.9. If hazardous constituents have been measured in the groundwater exceeding concentration limits in NR 664.0094 Table 1 or if groundwater monitoring conducted at the time of the license application at the waste boundary indicates the presence of hazardous waste constituents from the facility, sufficient information, supporting data and analyses to establish a corrective action program meeting NR 664.0100. NR 670.014(3)(h)	NA	No contamination plume has entered the groundwater.	
Section E. Corrective Action and Solid Waste Management Units NR 670.014(4)			
E.1. Topographic map showing location of SWMU. NR 670.014(4)(a)1.	Drawing D-2 Drawing D-8		
E.2. Designate type of SWMU. NR 670.014(4)(a)2.	FPOR Section 2.6.2		
E.3. General dimensions and structural description of SWMU. NR 670.014(4)(a)3.	Appendix M		
E.4. When the SWMU was operated. NR 670.014(4)(a)4.	FPOR Section 2.6.2		
E.5. All wastes managed at the SWMU are specified. NR 670.014(4)(a)5.	FPOR Section 2.6.2		
E.6. For each unit, a description of corrective action as defined in s. 291.37 (1) (a), Stats., that was previously taken or is required to be taken, including a description of the corrective action, and the anticipated time period for achieving compliance and the basis for its length. 670.014(4)(a)6.	FPOR Section 2.6.2 Appendix GG		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
E.7. For each unit for which corrective action is required to be taken, a cost estimate for completion of corrective action that is consistent with the long-term care cost estimate requirements as specified in s. NR 664.0014(1). 670.014(4)(a)6. (Note - The FPOR should also specify how financial assurance for corrective action will be established).	FPOR Section 2.6.2 Appendix GG		
E.8. All available information pertaining to releases of hazardous waste constituents from hazardous waste units. NR 670.014(4)(b)	FPOR Section 2.6.3		
E.9. Results of sampling and analysis of surface or groundwater, soil and air sampling if the department determines a RFA is necessary. NR 670.014(4)(c)	FPOR Section 2.6.1.2		
Section F. Location Standards NR 670.014(2)(k) and NR 670.014(2)(s)			
F.1. Identify if facility is in a 100-year floodplain and source of data. NR 670.014(2)(k)3.	FPOR Section 2.1.4		
F.2. Copy of federal insurance administration flood map, or calculations and maps if FIA map is not available. NR 670.014(2)(k)3.	Appendix MM Figure 4		
F.3. Identify 100-year flood level and other flooding factors (wave action) considered in design, construction, operation or maintenance of facility to withstand washout from 100 year flood. NR 670.014(2)(k)3.	Appendix MM Section 3.3	Facility is not located on a 100-year flood plain.	
F.4. If facility is located in 100 year flood plain, engineering analysis of various hydrodynamic and hydrostatic forces. NR 670.014(2)(k)4.a. AND	NA	Facility is not located on a 100-year flood plain.	
F.5. Structural or other engineering studies showing design of operational units and flood protection devices and how they will prevent washout. NR 670.014(2)(k)4.b. OR	NA	Facility is not located on a 100-year flood plain.	
F.6. Description of procedures to move hazardous waste before flooding, including timing; new approved or licensed location; resources needed; and, potential of discharge during move. NR 670.014(2)(k)4.c.	NA	Facility is not located on a 100-year flood plain.	

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
F.7. If a facility located in a 100-year floodplain is not designed, constructed, operated and maintained to prevent washout, a demonstration that procedures in effect to move the waste safely to a location that is not vulnerable to flood waters before flood waters reach the facility. NR 664.0018(2)(a)	NA	Facility is not located on a 100-year flood plain.	
F.8. If an existing facility is not in compliance with F.7., a plan and schedule to bring the facility into compliance. NR 670.014(2)(k)5.	NA	Facility is not located on a 100-year flood plain.	
F.9. A dated topographic map showing a distance of 1,000 feet around the facility, with a scale of no more than 1 inch to 200 feet, and contour intervals that clearly shows pattern of surface water flow of waste management unit. NR 670.014(2)(s)	Drawing D-1		
F.10. Map shows map scale and date. NR 670.014(2)(s)1.	Drawings D-1 to D-9		
F.11. Map shows 100 year flood plain area. NR 670.014(2)(s)2.	Appendix MM Figure 4		
F.12. Map shows surface waters, including intermittent streams. NR 670.014(2)(s)3	Drawing D-1		
F.13. Map shows surrounding land uses (residential, commercial, agricultural, recreational). NR 670.014(2)(s)4	Drawing D-1		
F.14. Map shows wind rose (prevailing wind speed and direction). NR 670.014(2)(s)5	Drawing D-1		
F.15. Map shows map orientation. NR 670.014(2)(s)6	Drawings D-1 to D-9		
F.16. Map shows legal boundaries of the hazardous waste facility. NR 670.014(2)(s)7	Drawing D-1		
F.17. Map shows access control (fence, gates). NR 670.014(2)(s)8	Drawing D-1		
F.18. Map shows location of injection or supply wells on-site and off-site. NR 670.014(2)(s)9	Drawing D-1	No injection wells located onsite.	
F.19. Map shows buildings and storage, treatment or disposal operations. NR 670.014(2)(s)10.	Drawing D-1		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
F.20. Map shows other structures such as recreation areas, runoff control systems, roads, sewers, loading, unloading areas, etc. NR 670.014(2)(s)10.	Drawing D-1		
F.21. Map shows barriers for drainage or flood control. NR 670.014(2)(s)11.	Drawing D-1	No barriers for drainage and flood control are needed.	
F.22. Map shows location of operational units where hazardous waste will be treated, stored or disposed. NR 670.014(2)(s)12.	Drawing D-1 and D-3		
F.23. Facility is not located in a critical habitat for threatened or endangered species. NR 670.014(2)(k)6.a.	FPOR Section 2.1.1		
F.24. Facility is not located in a wetland. NR 670.014(2)(k)6.b.	Appendix MM Section 3.3		
Section G: Waste Analysis Plan Requirements NR 670.014(2)(c)			
G.1. Procedures for obtaining chemical and physical analyses of hazardous waste managed at facility. NR 664.0013(1)(a)	Appendix NN Section 3.0		
G.2. Analysis by WI certified labs. NR 664.0013(1)(a)1.	Appendix NN Section 3.0		
G.3. Description of other data to be used rather than lab analysis. NR 664.0013(1)(b)	NA	"Other" data not used; determination based on NR 664.0013(1)(a)	
G.4. At a minimum, analysis is repeated if the process generating the waste has changed or when the inspection upon receiving the waste does not match the description on the manifest. NR 664.0013(1)(c).	Appendix NN Section 3.1.3		
G.5. For off-site waste, analysis upon receipt to verify waste matches description on manifest. NR 664.0013(1)(d)	Appendix NN Section 5.0		
G.6. Parameters for which waste will be analyzed and rationale. NR 664.0013(2)(a)	Appendix NN Section 3.1		
G.7. Test methods that will be used. NR 664.0013(2)(b)	Appendix NN Section 3.1		
G.8. Sampling methods to obtain representative sample. NR 664.0013(2)(c)	Appendix NN Section 3.1.1		
G.9. Frequency of repeating initial analysis to ensure it is accurate and up to date. NR 664.0013(2)(d)	Appendix NN Section 3.1.1		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
G.10. For off-site waste, the waste analysis generators agree to supply. NR 664.0013(2)(e)	Appendix NN Section 3.1.2		
G.11. If ignitable, reactive or incompatible wastes are managed, the waste analysis methods used to comply with NR 664.0017(3). NR 664.0013(2)(f)	Appendix NN Section 5.0		
G.12. If the facility is subject to NR 664 subch. AA standards for process vents, the test methods and procedures used to comply with NR 664.1034(4). NR 664.0013(2)(f)	NA	Facility not subject to NR 664 subch. AA	
G.13. The test methods and procedures used to determine the applicability of NR 664 subch. BB standards for each piece of equipment, per NR 664.1063(4). NR 664.0013(2)(f)	NA	Facility not subject to NR 664 subch. BB	
G.14. If the facility is subject to NR 664 subch. CC standards for containers or tanks, the waste determination assessments required in NR 664.1083. NR 664.0013(2)(f)	Appendix NN Section 5.3		
G.15. The testing performed to determine if the waste meets or exceeds LDR standards, as required by NR 668.07. NR 664.0013(2)(f)	Appendix NN Section 5.0		
G.16. Information if seeking exemption to subch. CC requirements. NR 664.0013(2)(h)	NA	Site is not seeking an exemption to subch. CC	
G.17. For off-site waste, procedures used to inspect, and if necessary, analyze each movement of waste to ensure it matches the identity of the waste designated on the manifest. NR 664.0013(3)	Appendix NN Section 5.0		
Section H: Security Requirements NR 670.014(2)(d)			
H.1. Security procedures to prevent unknowing entry by a 24 hour surveillance system which continuously monitors and controls entry. NR 664.0014(2)(a) OR,	NA	Facility complies with NR 664.0014(2)(b)	
H.2. The artificial or natural barrier surrounding active portions of facility and other means of controlled entry, such as gates or locked entrance AND NR 664.0014(2)(b)	FPOR Section 5.4		
H.3. The placement of "Danger – Unauthorized Persons Keep Out" signs at entrances and other locations. NR 664.0014(3)	FPOR Section 5.4		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
H.4. Demonstration that the above security requirements are not necessary. NR 664.0014(1)	NA	Proper security measures are in place.	
Section I. General Inspection Requirements NR 670.014(2)(e)			
I.1. Description of the equipment and devices inspected. NR 664.0015(2)(a)	FPOR Section 7.1		
I.2. Description of problems checked during the inspection. NR 664.0015(2)(c)	FPOR Section 7.1		
I.3. Inspection schedule for closed vent system and control device, required by NR 664.1033. NR 670.014(2)(d)	NA	Facility not subject to NR 664 subch. AA	
I.4. Inspection schedule for subch. BB pumps in light liquid service, required by NR 664.1052. NR 670.014(2)(d)	NA	Facility not subject to NR 664 subch. BB	
I.5. Inspection schedule for subch. BB compressors, required by NR 664.1053. NR 670.014(2)(d)	NA	Facility not subject to NR 664 subch. BB	
I.6. Inspection schedule for subch. BB pumps and valves in heavy liquid service, pressure relief devices and connectors, required by NR 664.1058. NR 670.014(2)(d)	NA	Facility not subject to NR 664 subch. BB	
I.7. The inspection frequency for pumps, valves, pressure relief devices or connectors subject to subch. BB is adequate to prevent environmental or human health incidents. NR 664.0015(2)(d)	NA	Facility not subject to NR 664 subch. BB	
I.8. Areas subject to spills inspected daily when in use. NR 664.0015(2)(d)	FPOR section 7.1.2.1		
I.9. Inspection frequency for other areas based on deterioration of equipment and probability of environmental or human health incident if the deterioration, malfunction or any operator goes undetected between inspections. NR 664.0015(2)(d)	FPOR section 7.1.2		
I.10. Schedule to remedy ensures problem does not lead to environmental or health hazard. NR 664.0015(3)	FPOR Section 7.1		
I.11. Inspection log will be kept for at least 3 years and includes date and time of inspection; inspector name; observations made; date and type of remedial actions. NR 664.0015(4)	FPOR Section 7.1		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
Section J. Contingency Plan Requirements NR 670.014(2)(g)			
J.1. Copy of Contingency Plan. NR 670.014(2)(g)	FPOR Section 8 Appendix HH		
J.2. Plan is designed to minimize hazards to human health or the environment in the event of a release. NR 664.0051(1)	FPOR Section 8.1		
J.3. Provisions in the plan will be carried out immediately if release threatens human health or the environment. NR 664.0051(2)	FPOR Section 8.4		
J.4. Describes actions facility personnel will take if a release. NR 664.0052(1)	FPOR Section 8.5		
J.5. If using SPCC, it has been amended to incorporate hazardous waste provisions. NR 664.0052(2)	NA	The SPCC Plan has not been modified to incorporate hazardous waste provisions.	
J.6. Describes arrangements with local emergency agencies, hospitals and contractors. NR 664.0052(3)	FPOR Section 8.9		
J.7. Current list of emergency coordinator (primary and alternate) names, addresses and home/office phone numbers. NR 664.0052(4)	FPOR Section 8.3.1		
J.8. Current list of emergency equipment, describing location, physical description and capability of each item. NR 664.0052(5)	FPOR Table 8.3		
J.9. Evacuation plan, signals to begin evacuation and alternate routes. NR 664.0052(6)	FPOR Section 8.13		
J.10. Copy of plan kept at facility and copy sent to police and fire depts., hospital, and state and local response teams. NR 664.0053	FPOR Section 8.16		
J.11. Plan will be reviewed and amended, as necessary. NR 664.0054	FPOR Section 8.15		
J.12. Emergency coordinator always on premises or on call. NR 664.0055	FPOR Section 8.3.2		
J.13. Emergency coordinator is thoroughly familiar with plan, site operations, waste types handled, facility records and layout. NR 664.0055	FPOR Section 8.3.2		
J.14. Emergency coordinator has authority to commit resources to carry out contingency plan. NR 664.0055	FPOR Section 8.3.2		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
J.15. Emergency coordinator activates alarms and notifies state or local agencies. NR 664.0056(1)	FPOR Section 8.3.2		
J.16. Emergency coordinator identifies the character, sources, amount and extent of release. NR 664.0056(2)	FPOR Section 8.3.2		
J.17. Emergency coordinator assesses possible hazards to human health and environment. NR 664.0056(3)	FPOR Section 8.3.2		
J.18. Emergency coordinator notifies local authorities if evacuation is necessary. NR 664.0056(4)(a)	FPOR Section 8.3.2		
J.19. Emergency coordinator notifies emergency response officials of release outside of facility. NR 664.0056(4)(b)	FPOR Section 8.3.2		
J.20. Emergency coordinator takes reasonable measures to ensure fire, explosion or release do not occur or spread to other hazardous waste. NR 664.0056(5)	FPOR Section 8.3.2		
J.21. Emergency coordinator monitors for leaks, pressure build-up, and gas generation if operations stop. NR 664.0056(6)	FPOR Section 8.3.2		
J.22. Emergency coordinator arranges for treatment, storage, or disposal of materials after emergency. NR 664.0056(7)	FPOR Section 8.3.2		
J.23. Emergency coordinator ensures no incompatible waste is treated, stored or disposed until cleanup is completed. NR 664.0056(8)(a)	FPOR Section 8.3.2		
J.24. Emergency coordinator ensures all emergency equipment is clean and fit for use before operations resume. NR 664.0056(8)(b)	FPOR Section 8.3.2		
J.25. Implementation of plan will be noted in operating log and incident report sent to WDNR in 15 days. NR 664.0056(9)	FPOR Section 8.14		
Section K. Training Requirements NR 670.014(2)(L) and NR 664.0016			
K.1. Outline of both introductory and continuing training programs to prepare persons to operate or maintain facility in a safe manner, as required to demonstrate compliance with s. NR 664.0016. NR 670.014(2)(L), NR 664.0016(4)(c)	FPOR Section 13.1.1		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
K.2. A description of how training will be designed to meet actual job tasks according to s. NR 664.0016(1)(c). NR 670.014(2)(L)	FPOR Section 13.3.1.2		
K.3. Training program describes how facility personnel will successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of NR 664. NR 664.0016(1)(a)	FPOR Section 13.3.1.1.2		
K.2. Training program is to be directed by a person trained in hazardous waste management procedures, NR 664.0016(1)(b)	FPOR Section 13.3.2.1		
K.2. Training program teaches personnel hazardous waste management procedures relevant to the positions in which they are employed. NR 664.0016(1)(b)	FPOR Section 13.3 Appendix II, JJ		
K.3. Training program ensures facility personnel can respond effectively to emergencies by familiarizing them with emergency procedures, equipment and systems. NR 664.0016(1)(c)	FPOR section 13.3.1.1.2		
K.4. Training program establishes that personnel complete training within 6 months of being in new position and before working in unsupervised positions. NR 664.0016(2)	FPOR section 13.1.1		
K.5. Training program establishes that facility personnel take part in an annual review of the initial training. NR 664.0016(3)	FPOR section 13.1.1		
K.6. Training program describes training documentation to be maintained, including job title, job description, type and amount of training that is given, and records that document that the training or job experience required under NR 664.0016 has been completed. NR 664.0016(4)	FPOR section 13.2.2 Appendix II, JJ		
Section L. Closure Plan Requirements NR 670.014(2)(m)			
L.1. Copy of Closure Plan. NR 670.014(2)(m); NR 664.0112(1)	FPOR Section 9.1 Appendix Q		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
L.2. The plan shall identify steps necessary to perform partial or final closure of the facility, or both, at any point during its active life. NR 664.0112(2)	FPOR Section 9.1.2		
L.3. Description of how each unit will close during partial or final closure to minimize the need for further maintenance. NR 664.0112(2)(a); NR 664.0111(1)	FPOR Section 9.1.2		
L.4. Description of how each unit will close to control, minimize or eliminate post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off or hazardous waste decomposition products to the ground or surface waters or to the atmosphere. NR 664.0112(2)(a); NR 664.0111(2)	FPOR Section 9.1		
L.5. For container units, description of how the closure requirements of NR 664.0178 are met. This requires that the owner or operator shall remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as hazardous waste, unless s. NR 661.0003 (4) applies. NR 664.0111(3)	FPOR Section 9.1		
L.6. For tank systems, description of how the closure requirements of NR 664.0197 are met. This requires that hazardous waste and hazardous waste residues shall be removed from the containment system, and that remaining containers, liners, bases and soil containing or contaminated with hazardous waste or hazardous waste residues shall be decontaminated or removed. NR 664.0111(3)	NA	No tank systems onsite.	
L.7. For miscellaneous units, description of how closure will occur to ensure protection of human health and the environment in accordance with NR 664.0601. NR 664.0111(3)	FPOR Section 9.1.2		
L.4. Description of the maximum extent of operations during the active life of the facility. NR 664.0112(2)(b)	FPOR Section 9.1		
L.5. Estimate of maximum inventory during active life of facility. NR 664.0112(2)(c)	FPOR Section 9.1.2		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
L.6. Detailed description of methods used to remove, transport, treat, store, and dispose of all hazardous waste during partial and final closure. NR 664.0112(2)(c)	FPOR Section 9.1.2		
L.7. Identification of the types of off-site hazardous waste management units to be used. NR 664.0112(2)(c)	FPOR Section 9.1.2		
L.8. Detailed description of steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures and soils during partial and final closure. NR 664.0112(2)(d)	FPOR Section 9.1.2		
L.9. Detailed description of procedures for removing contaminated soils, methods for sampling and testing surrounding soils and criteria for determining the extent of decontamination required to satisfy the closure performance standard. NR 664.0112(2)(d)	FPOR Section 9.1.2		
L.10 Detailed description of other activities necessary during the closure period to ensure that all partial closures and final closure satisfy the closure performance standards, including, but not limited to, groundwater monitoring, leachate collection and run-on and run-off control. NR 664.0112(2)(e)	FPOR Section 9.1.2		
L.11. Schedule for closure of each hazardous waste management unit and final closure of the facility. NR 664.0112(2)(f)	FPOR section 9.2		
L.12. If a trust fund is used and the facility expects to close before the operating license expires, the estimated year of final closure. NR 664.0112(2)(g)	NA	Facility is not expected to close prior to the operating license expiring.	
L.13. Department will be notified at least 180 days prior to partial or final closure. NR 664.0112(4)(a)	FPOR section 9.2		
L.14. Within 90 days of receiving the final volume of hazardous waste, all hazardous waste is treated, or removed from the unit or facility. NR 664.0113(1)	FPOR section 9.2		
L 15. Partial and final closure activities are completed within 180 days after receiving the final volume of hazardous waste. NR 664.0113(2)	FPOR section 9.2		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
L.16. All contaminated equipment, structures, and soils will be properly disposed of or decontaminated. NR 664.0114	FPOR section 9.2		
L.17. Within 60 days of completing final closure, a certification of closure will be sent to the department. The certification shall be signed by the owner or operator and by a qualified professional engineer. NR 664.0115	FPOR section 9.3		
Section M: Closure Cost Estimate and Financial Responsibility NR 670.014(2)(o)			
M.1. The most recent detailed written closure cost estimate in current dollars for closing the facility in accordance with the approved closure plan. NR 664.0142(1)	FPOR Section 10.1		
M.2. Cost estimate equals the cost of final closure when facility operations make closure the most expensive. NR 664.0142(1)(a)	FPOR Section 10.1		
M.3. Cost estimate is based on hiring a third party to close the facility. NR 664.0142(1)(b)	FPOR Section 10.1		
M.4. Cost estimate does not incorporate any salvage value of hazardous waste, structures, equipment, land or assets. NR 664.0142(1)(c)	FPOR Section 10.1		
M.5. Closure estimate does not include a zero cost for hazardous waste that might have economic value. NR 664.0142(1)(d)	FPOR Section 10.1		
M.6. Facility has established financial assurance that covers the closure cost estimate. NR 664.0143	FPOR Section 10.2		
M.7. The financial assurance mechanism meets all applicable requirements in NR 664.0143.	FPOR Section 10.2		
M.8. If a new facility, the financial assurance is submitted 60 days prior to initial receipt of waste. NR 670.014(2)(o)	NA	The facility is not new.	
Section N: Pollution Liability Insurance NR 670.014(2)(q)			
N.1. Copy of the insurance policy or other documentation demonstrating liability coverage. NR 670.014(2)(q)	FPOR Section 11 Appendix Y		
N.2. Financial responsibility covers bodily injury and property damage to third parties caused by sudden accidental occurrences arising from operations of the facility. NR 664.0147(1)	FPOR Section 11 Appendix Y		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
N.3. Coverage for sudden accidental occurrences of at least \$1 million per occurrence with annual aggregate of at least \$2 million. NR 664.0147(1)	FPOR Section 11 Appendix Y		
N.4. If a new facility, documentation showing the amount of insurance to be in place before the initial receipt of waste. NR 670.014(2)(q).	NA	The facility is not new.	
Section O: Other Information			
Note: This information will assist the department in processing the application and initiating the review.			
O.1 Each local government having jurisdiction over the area where the facility is proposed to be located. NR 670.410(3)(a)10	FPOR Section 1.3		This usually includes the city/town/village; and the county
O.2 Each affected municipality as defined in s. 289.01(1), Wis. Stat. NR 670.410(3)(a)(12)	FPOR Section 1.3		This generally includes any municipality within 1500 feet of the facility.
O.3 Name of Operator. NR 670.010(2)	Appendix LL		
O.4 Operator contact person and contact information.	Appendix LL		
O.5 Name of Owner. NR 670.010(2)	Appendix LL		
O.6 Owner name, address, and signature (if different than the operator). NR 670.010(2)	Appendix LL		
O.7 Number of acres in the total facility, and by parcel (if the facility contains multiple parcels)	FPOR Section 2.1.1		See definition of facility in NR 660.10(43).
O.8 A table that summarizes the name, and proposed maximum capacities (and units of measurement), required for each licensed unit. This should clearly identify any changes from the existing license.	Appendix LL		
O.9 Environmental Justice: EJScreen information for multiple radii, and recommendations for specific outreach activities to be taken by applicant or the department based on the results. NR 670.014(2)(x)2.d.4.	Appendix MM Section 4		See https://www.epa.gov/ejscreen
O.10 A general summary of the site characteristics as well as any specific data the department requires by rule regarding the site's topography, soils, geology, groundwaters and surface waters and other features of the site and surrounding area. 289.24(1)(a)	FPOR Section 2 Appendix MM		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
O.11 Preliminary engineering design concepts including the proposed design capacity of the facility and an indication of the quantities and characteristics of the wastes to be treated, stored or disposed. 289.24(1)(b)	FPOR Section 4.0		
O.12 A description of how the proposed facility relates to any applicable county solid waste management plan approved under s. 289.10. 289.24(1)(c)	FPOR Section 1.3		This may not apply to some hazardous waste facilities
O.13 A description of the advisory process undertaken by the applicant prior to submittal of the feasibility report to provide information to the public and affected municipalities and to solicit public opinion on the proposed facility. 289.24(1)(d)	FPOR Section 1.3		
O.14 The proposed date of closure for the facility. 289.24(1)(e)	NA	There is no proposed date of closure at this time.	
O.15 Sufficient information to make the determination of need for the facility under s. 289.28 unless the facility is exempt under s. 289.28 (2). 289.24(1)(f)	FPOR Section 2.4		
O.16 An analysis of alternatives to the land disposal of waste including waste reduction, reuse, recycling, composting and energy recovery. 289.24(1)(g)	NA	The facility does not plan on using alternatives.	
O.17 A description of any waste reduction incentives and recycling services to be instituted or provided with the proposed facility. 289.24(1)(h)	FPOR Section 4.6.1	The facility does not have any waste reduction incentives but does provide fluorescent lamp recycling services	
O.18 A description of the manner of solid waste disposal or hazardous waste treatment, storage or disposal 289.30(4)	FPOR Section 4.1 - 4.6		
O.19 Descriptions of the proposed development, daily operation, closing and long-term care of the facility. 289.30(4)	FPOR Section 4.0 and 9.0		
O.20 The method by which the owner or operator will maintain proof of financial responsibility under s. 289.41. 289.30(4)	FPOR Section 10		

PART I - GENERAL REQUIREMENTS (applicable to all facilities)			
Information Required and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
O.21 Non-licensed processing. Describe the location of and procedures to properly manage and control hazardous waste processing activities that will occur at the facility. "Processing" or "Process" means when the contents of a container or tank are added to a different container or tank or combined with other wastes or materials or are otherwise treated in a manner not requiring a hazardous waste license.	FPOR Section 4.3		Examples of processing include: consolidation, commingling or bulking; lab-packing, depacking , and re-packing; elementary neutralization; wastewater treatment unit treatment; qualifying treatability studies; recycling and reclamation.
O.22 Other hazardous waste handling: Identify the locations in the facility where wastes are treated or stored in accordance with generator or transportation requirements in NR 662 and NR 663, respectively.	Drawing D-3		Examples include 90-day storage areas, satellite accumulation areas, and 10-day transfer activities.

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
Section D: Tank Standards – General NR 670.016			
D.1. Dimensions and capacity of each tank. NR 670.016(2)	NA	Tanks are not used at the facility	
D.2. Description of feed systems, safety cutoff, bypass systems and pressure controls. NR 670.016(3)	NA	Tanks are not used at the facility	
D.3. Diagram of piping, instrumentation and process flow for each tank system. NR 670.016(4)	NA	Tanks are not used at the facility	
D.4. Description of spill prevention controls, such as check valves, dry disconnect couplings. NR 664.0194(2)(a)	NA	Tanks are not used at the facility	
D.5. Description of overfill prevention controls, such as level sensing devices, high level alarms, automatic feed cutoff or bypass to a standby tank. NR 664.0194(2)(b)	NA	Tanks are not used at the facility	
D.6. Description of how sufficient freeboard in uncovered tanks will be maintained to prevent overtopping by wave or wind action or precipitation. NR 664.0194(2)(c)	NA	Tanks are not used at the facility	
Section E: Tank Standards – Inspections NR 670.014(2)(e)			
E.1. Inspection schedule for tank overfill controls. NR 664.0195(1).	NA	Tanks are not used at the facility	
E.2. Aboveground portions of tank systems inspected at least once each operating day to detect corrosion or releases of waste. NR 664.1095(2)(a)	NA	Tanks are not used at the facility	
E.3. Construction materials and area immediately surrounding tank systems inspected at least once each operating day to detect erosion or signs of releases. NR 664.1095(2)(c)	NA	Tanks are not used at the facility	
E.4. Data gathered from monitoring and leak detection equipment inspected at least once each operating day to ensure the tank system is operated according to design. NR 664.1095(2)(b)	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
E.5. Proper operation of the cathodic protection system is confirmed by inspection within 6 months of initial installation and annually thereafter. NR 664.1095(3)(a)	NA	Tanks are not used at the facility	
E.6. All sources of impressed current inspected and/or tested, as appropriate, at least every other month. NR 664.1095(3)(b)	NA	Tanks are not used at the facility	
E.7. Inspection schedule for subch. CC tank requirements, as stated in 664.1084 and 664.1088. NR 670.014(2)(e)	NA	Tanks are not used at the facility	
E.8. Inspection frequencies required by subch. CC for tanks are adequate to prevent environmental or human health incidents. NR 664.0015(2)(d)	NA	Tanks are not used at the facility	
Section F: Tank Standards – Existing Tanks NR 670.016(1)			
F.1. For each tank system installed before March 1, 1991, a written assessment reviewed and certified by an independent, qualified, registered PE as to the structural integrity and suitability for handling hazardous waste which includes the information in F.2. to F.8. NR 670.016(1)	NA	Tanks are not used at the facility	
F.2. Design standards for construction of the tank and ancillary equipment. NR 664.0191(2)(a)	NA	Tanks are not used at the facility	
F.3. Hazardous characteristics for the wastes handled. NR 664.0191(2)(b)	NA	Tanks are not used at the facility	
F.4. Existing corrosion protection measures. NR 664.0191(2)(c)	NA	Tanks are not used at the facility	
F.5. The age of the tank system, either documented or estimated. NR 664.0191(2)(d)	NA	Tanks are not used at the facility	
F.6. Results of a leak test, internal inspection or other tank integrity examination. NR 664.0191(2)(e)	NA	Tanks are not used at the facility	
F.7. If underground tanks cannot be entered, a leak test capable of taking into account the effects of temperature variations, tank end deflection, vapor pockets and high water table effects. NR 664.0191(2)(e)1.	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
F.8. If other tanks cannot be entered, a leak test or other integrity examination certified by a PE that addresses cracks, leaks, corrosion, and erosion. NR 664.0191(2)(e)2.	NA	Tanks are not used at the facility	
F.9. If, as a result of the assessment, the tank was found to be leaking or unfit for use, steps were taken to comply with F.10. to F.22. NR 664.0191(4)	NA	Tanks are not used at the facility	
F.10. Tank system or secondary containment system removed from service immediately. NR 664.0196	NA	Tanks are not used at the facility	
F.11. Flow of hazardous waste into the tank system or secondary containment system stopped immediately and the system inspected to determine the cause of the release. NR 664.0196(1)	NA	Tanks are not used at the facility	
F.12. If the release was from the tank system, as much waste as necessary was removed to prevent further releases and to allow inspection and repair of the tank system within 24 hours after detection or at the earliest practicable time. NR 664.0196(2)(a)	NA	Tanks are not used at the facility	
F.13. If the material was released to a secondary containment system, all released material was removed within 24 hours or in a timely manner to prevent harm to human health and the environment. NR 664.0196(2)(b)	NA	Tanks are not used at the facility	
F.14. Visual inspection of the release conducted. NR 664.0196(3)	NA	Tanks are not used at the facility	
F.15. Further migration of the spill to soils or surface water was prevented. NR 664.0196(3)(a)	NA	Tanks are not used at the facility	
F.16. Visible contamination of the soil or surface water was removed and properly disposed. NR 664.0196(3)(b)	NA	Tanks are not used at the facility	
F.17. Release reported to the Department within 24 hours of its detection, unless less than one pound was released and material was contained and cleaned up immediately. NR 664.0196(4)	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
F.18. Written report submitted to the Department within 30 days of detecting the release. NR 664.0196(4)(c)	NA	Tanks are not used at the facility	
F.19. System was returned to service after cleanup and repairs if the integrity of the tank system was not damaged. NR 664.0196(5)(b)	NA	Tanks are not used at the facility	
F.20. If the leak was from the tank system into secondary containment, the system was repaired before the tank was returned to service. NR 664.0196(5)(c)	NA	Tanks are not used at the facility	
F.21. If the leak was from a component that did not have secondary containment, either secondary containment will be provided or repairs are made if the component can be visually inspected. NR 664.0196(5)(d)	NA	Tanks are not used at the facility	
F.22. If major repairs were made, a PE certification was submitted to the Department within 7 days of returning the tank system to use. NR 664.0196(6)	NA	Tanks are not used at the facility	
Section G: Tank Standards – New Tanks NR 670.016(1) and NR 670.016(6)			
G.1. For each new tank system, a written assessment reviewed and certified by an independent, qualified, registered PE as to the structural integrity and suitability for handling hazardous waste which includes the information in G.2. to G.19. NR 670.016(1)	NA	Tanks are not used at the facility	
G.2. Design standards to which the tanks and ancillary equipment are constructed. NR 664.0192(1)(a)	NA	Tanks are not used at the facility	
G.3. Hazardous characteristics of the wastes to be handled. NR 664.0192(1)(b)	NA	Tanks are not used at the facility	
G.4. If the external shell of the metal tank or any external metal component of the tank system will be in contact with soil or water, a determination by a corrosion expert of factors affecting the potential for corrosion, including G.5. to G.9, at a minimum. NR 664.0192(1)(c)	NA	Tanks are not used at the facility	
G.5. Soil moisture content, pH, sulfides level, and resistivity. NR 664.0192(1)(c)1	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
G.6. Structure to soil potential. NR 664.0192(1)(c)1	NA	Tanks are not used at the facility	
G.7. Influence of nearby underground metal structures, such as piping. NR 664.0192(1)(c)1	NA	Tanks are not used at the facility	
G.8. Existence of stray electric current. NR 664.0192(1)(c)1	NA	Tanks are not used at the facility	
G.9. Existing corrosion-protection measures. NR 664.0192(1)(c)1	NA	Tanks are not used at the facility	
G.10. A description of materials and equipment used to provide external corrosion protection to ensure the integrity of the tank system during its use, including one or more of those in G.11 to G.13. NR 664.0192(1)(c)2	NA	Tanks are not used at the facility	
G.11. Corrosion-resistant materials of construction such as special alloys, fiberglass, reinforced plastic, etc. NR 664.0192(1)(c)2.a.	NA	Tanks are not used at the facility	
G.12. Corrosion-resistant coating with cathodic protection. NR 664.0192(1)(c)2.b.	NA	Tanks are not used at the facility	
G.13. Electrical isolation devices such as insulating joints, flanges, etc. NR 664.0192(1)(c)2.c.	NA	Tanks are not used at the facility	
G.14. For underground tank system components that are likely to be adversely affected by vehicular traffic, the design or operational measures that will protect the tank system against potential damage. NR 664.0192(1)(d)	NA	Tanks are not used at the facility	
G.15. Design considerations to ensure tank foundations will maintain the load of a full tank. NR 664.0192(1)(e)1.	NA	Tanks are not used at the facility	
G.16. Design considerations to ensure tank systems will be anchored to prevent flotation or dislodgment when the tank system is placed in a saturated zone. NR 664.0192(1)(e)2.	NA	Tanks are not used at the facility	
G.17. Design considerations to ensure tank systems will withstand the effects of frost heave. NR 664.0192(1)(e)3.	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
G.18. Foundation, structural support, seams, connections and pressure controls, if needed, are adequately designed to ensure the tank system will not collapse, rupture or fail. NR 664.0192(1)	NA	Tanks are not used at the facility	
G.19. The tank system has sufficient structural strength, compatibility with the wastes to be stored or treated and corrosion protection to ensure it will not collapse, rupture or fail. NR 664.0192(1)	NA	Tanks are not used at the facility	
G.20. A detailed description of how the tank systems will be installed in compliance with G.21. to G.28. NR 670.016(6)	NA	Tanks are not used at the facility	
G.21. Before covering, enclosing or placing a new tank system or component in use, an independent qualified installation inspector or registered PE who is trained and experienced in the proper installation of tank systems or components will inspect the system for the presence of weld breaks, punctures, scrapes of protective coatings, cracks, corrosion and other structural damage or inadequate construction or installation. NR 664.0192(2)	NA	Tanks are not used at the facility	
G.22. All structural damage or inadequate construction or installation will be remedied before the tank system is covered, enclosed or placed in use. NR 664.0192(2)	NA	Tanks are not used at the facility	
G.23. For tank systems or components placed underground, the backfill material is noncorrosive, porous and homogeneous, installed so the backfill is placed completely around the tank, and compacted to ensure the tank and piping are fully and uniformly supported. NR 664.0192(3)	NA	Tanks are not used at the facility	
G.24. All tanks and ancillary equipment will be tightness tested before being covered, enclosed or placed in use. NR 664.0192(4)	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
G.25. If the tank system is found not to be tight, all repairs necessary to remedy the leaks in the system will be performed before the tank system is covered, enclosed or placed into use. NR 664.0192(4)	NA	Tanks are not used at the facility	
G.26. Ancillary equipment is supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction. NR 664.0192(5)	NA	Tanks are not used at the facility	
G.27. The type and degree of corrosion protection recommended by an independent corrosion expert is provided. NR 664.0192(6)	NA	Tanks are not used at the facility	
G.28. If field fabricated, a corrosion expert will supervise the installation of the corrosion protection system to ensure proper installation. NR 664.0192(6)	NA	Tanks are not used at the facility	
Section H: Tank Standards – Secondary Containment NR 670.016(7) and NR 670.016(8)			
H.1. Detailed plans and description of how the secondary containment system for each tank system meets the requirements stated in H.2. to H.9. NR 670.016(7)	NA	Tanks are not used at the facility	
H.2. Designed, constructed and operated to prevent the migration of wastes or accumulated liquid out of the system to the soil, groundwater or surface water at any time during use of the tank system. NR 664.0193(2)(a)	NA	Tanks are not used at the facility	
H.3. Designed, constructed and operated to detect and collect releases and accumulated liquid until the material is removed. NR 664.0193(2)(b)	NA	Tanks are not used at the facility	
H.4. Constructed of or lined with materials that are compatible with the wastes to be placed in the tank system. NR 664.0193(3)(a)	NA	Tanks are not used at the facility	
H.5. Has sufficient strength and thickness to prevent failure due to pressure gradients, physical contact with the waste, climatic conditions and stress of daily operation. NR 664.0193(3)(a)	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
H.6. Placed on a foundation or base capable of providing support and resistance to pressure gradients above and below the system, and preventing failure due to settlement, compression or uplift. NR 664.0193(3)(b)	NA	Tanks are not used at the facility	
H.7. Provided with a leak detection system designed and operated to detect the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours or at the earliest practicable time unless demonstrated that existing detection technologies or site conditions will not allow detection of a release within 24 hours. NR 664.0193(3)(c)	NA	Tanks are not used at the facility	
H.8. Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills or precipitation. NR 664.0193(3)(d)	NA	Tanks are not used at the facility	
H.9. Spilled or leaked waste and accumulated precipitation will be removed from the secondary containment system within 24 hours or in a timely manner that prevents harm to human health and the environment if demonstrated that the material cannot be removed in 24 hours. NR 664.0193(3)(d)	NA	Tanks are not used at the facility	
H.10. Detailed plans and description of how an external liner system for each tank system meets the requirements stated in H.11. to H.14. NR 670.016(7)	NA	Tanks are not used at the facility	
H.11. Designed or operated to contain 100% of the capacity of the largest tank within its boundary. NR 664.0193(5)(a)1.	NA	Tanks are not used at the facility	
H.12. Designed or operated to prevent run-on or infiltration of precipitation into the external liner system unless the collection system has sufficient excess capacity to contain run-on or infiltration from a 25 year, 24 hour rainfall event. NR 664.0193(5)(a)2.	NA	Tanks are not used at the facility	
H.13. Free of cracks and gaps. NR 664.0193(5)(a)3.	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
H.14. Designed and installed to surround the tank completely and cover all surrounding earth likely to come into contact with the waste if a release from the tank (capable of preventing lateral and vertical migration of waste). NR 664.0193(5)(a)4.	NA	Tanks are not used at the facility	
H.15. Detailed plans and description of how a vault system for each tank system meets the requirements stated in H.16. to H.21. NR 670.016(7)	NA	Tanks are not used at the facility	
H.16. Designed or operated to contain 100% of the capacity of the largest tank within its boundary. NR 664.0193(5)(b)1.	NA	Tanks are not used at the facility	
H.17. Designed or operated to prevent run-on or infiltration of precipitation into the vault system unless the collection system has sufficient excess capacity to contain run-on or infiltration from a 25 year, 24 hour rainfall event. NR 664.0193(5)(b)2.	NA	Tanks are not used at the facility	
H.18. Constructed with chemical-resistant water stops in place at all joints. NR 664.0193(5)(b)3.	NA	Tanks are not used at the facility	
H.19. Provided with an impermeable interior coating or lining compatible with the stored waste to prevent migration of waste into the concrete. NR 664.0193(5)(b)4.	NA	Tanks are not used at the facility	
H.20. Provided with a means to protect against the formation and ignition of vapors within the vault, if the waste stored or treated is ignitable waste or reactive waste capable of forming ignitable or explosive vapor. NR 664.0193(5)(b)5.	NA	Tanks are not used at the facility	
H.21. Provided with an exterior moisture barrier or otherwise designed or operated to prevent migration of moisture into the vault if it is subject to hydraulic pressure. NR 664.0193(5)(b)6.	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
H.22. Detailed plans and description of how a double-walled tank system for each tank system meets the requirements stated in H.23. to H.25. NR 670.016(7)	NA	Tanks are not used at the facility	
H.23. Designed as an integral structure so that the outer shell contains any release from the inner tank. NR 664.0193(5)(c)1.	NA	Tanks are not used at the facility	
H.24. Protected, if constructed of metal, from both corrosion of the primary tank interior and of the external surface of the outer shell. NR 664.0193(5)(c)2.	NA	Tanks are not used at the facility	
H.25. Provided with a built-in continuous leak detection system capable of detecting a release within 24 hours or at the earliest practicable time if demonstrated that existing detection technology or site conditions would not allow detection of a release within 24 hours. NR 664.0193(5)(c)3.	NA	Tanks are not used at the facility	
H.26. Detailed plans and description of how ancillary equipment for each tank system will be provided with secondary containment except for aboveground piping; welded flanges, joints and connections; sealless or magnetic coupling pumps and sealless valves; and, pressurized aboveground piping systems with automatic shut-off devices that are visually inspected for leaks on a daily basis. NR 664.0193(6)	NA	Tanks are not used at the facility	
H.27. If seeking an alternative to the requirements of this section, detailed plans and engineering and hydrogeologic reports describing alternate design and operating practices; and, an evaluation of location characteristics which demonstrate the migration of hazardous waste or constituents into groundwater or surface water during the life of the facility is prevented. NR 670.016(8)(a)	NA	Tanks are not used at the facility	
H.28. If seeking an alternative to the requirements of this section, a detailed assessment of the substantial present or potential hazards posed to human health or the environment should a release enter the environment. NR 670.016(8)(b)	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
Section I: Tank Standards – Ignitable, Reactive and Incompatible Wastes NR 670.016(10)			
I.1. If ignitable or reactive waste is treated, rendered or mixed before or immediately after placement in the tank system, a description of how operating procedures and tank system and facility design will ensure the resulting waste, mixture or dissolved material no longer meets the definition of ignitable or reactive waste. NR 664.0198(1)(a)1.	NA	Tanks are not used at the facility	
I.2. If ignitable or reactive waste is treated, rendered or mixed before or immediately after placement in the tank system, a description of how operating procedures and tank system and facility design will ensure I.3. to I.7. will be met. NR 664.0198(1)(a)2.	NA	Tanks are not used at the facility	
I.3. Precautions taken to prevent reactions generating extreme heat or pressure, fire or explosions or violent reactions. NR 664.0017(2)(a)	NA	Tanks are not used at the facility	
I.4. Precautions taken to prevent reactions producing uncontrolled toxic mists, fumes, dusts or gases in sufficient quantities to threaten human health or the environment. NR 664.0017(2)(b)	NA	Tanks are not used at the facility	
I.5. Precautions taken to prevent reactions producing uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion. NR 664.0017(2)(c)	NA	Tanks are not used at the facility	
I.6. Precautions taken to prevent reactions damaging the structural integrity of the device or facility. NR 664.0017(2)(d)	NA	Tanks are not used at the facility	
I.7. Precautions taken to prevent reactions which, through other means, threaten human health or the environment. NR 664.0017(2)(e)	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
I.8. Documentation demonstrating compliance with I.2.. to I.7., including references to published scientific or engineering literature, data from trial tests, waste analysis or the results of treatment of similar waste by similar treatment under similar operating conditions. NR 664.0017(3)	NA	Tanks are not used at the facility	
I.9. If ignitable or reactive waste is placed in the tank system, an alternative to I.2. to I.8. is to provide a description of how operating procedures and tank system and facility design will ensure the waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react. NR 664.0198(1)(b)	NA	Tanks are not used at the facility	
I.10. If ignitable or reactive waste is placed in the tank system, an alternative to I.2 to I.8 or I.9. is to provide a description of how operating procedures, the tank system and facility design will ensure the tank system is used solely for emergencies. NR 664.0198(1)(c)	NA	Tanks are not used at the facility	
I.11. If the facility stores or treats ignitable or reactive waste in a tank, demonstrate compliance with the requirements to maintain protective distances between the waste management area and any public ways, streets, alleys or an adjoining property line that can be built upon, as required by Tables 2-1 to 2-6 of NFPA's "Flammable and Combustible Liquids Code. NR 664.0198(2)	NA	Tanks are not used at the facility	
I.12. Incompatible wastes are not placed in the same tank system unless the requirements in I.3. to I.8. are met. NR 664.0199(1)	NA	Tanks are not used at the facility	
I.13. Hazardous waste is not placed in a tank system that previously held an incompatible waste and has not been decontaminated unless the requirements of I.3. to I.8. are met. NR 664.0199(2)	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
Section D: Tank Standards – General NR 670.016			
D.1. Dimensions and capacity of each tank. NR 670.016(2)	NA	Tanks are not used at the facility	
D.2. Description of feed systems, safety cutoff, bypass systems and pressure controls. NR 670.016(3)	NA	Tanks are not used at the facility	
D.3. Diagram of piping, instrumentation and process flow for each tank system. NR 670.016(4)	NA	Tanks are not used at the facility	
D.4. Description of spill prevention controls, such as check valves, dry disconnect couplings. NR 664.0194(2)(a)	NA	Tanks are not used at the facility	
D.5. Description of overfill prevention controls, such as level sensing devices, high level alarms, automatic feed cutoff or bypass to a standby tank. NR 664.0194(2)(b)	NA	Tanks are not used at the facility	
D.6. Description of how sufficient freeboard in uncovered tanks will be maintained to prevent overtopping by wave or wind action or precipitation. NR 664.0194(2)(c)	NA	Tanks are not used at the facility	
Section E: Tank Standards – Inspections NR 670.014(2)(e)			
E.1. Inspection schedule for tank overfill controls. NR 664.0195(1).	NA	Tanks are not used at the facility	
E.2. Aboveground portions of tank systems inspected at least once each operating day to detect corrosion or releases of waste. NR 664.1095(2)(a)	NA	Tanks are not used at the facility	
E.3. Construction materials and area immediately surrounding tank systems inspected at least once each operating day to detect erosion or signs of releases. NR 664.1095(2)(c)	NA	Tanks are not used at the facility	
E.4. Data gathered from monitoring and leak detection equipment inspected at least once each operating day to ensure the tank system is operated according to design. NR 664.1095(2)(b)	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
E.5. Proper operation of the cathodic protection system is confirmed by inspection within 6 months of initial installation and annually thereafter. NR 664.1095(3)(a)	NA	Tanks are not used at the facility	
E.6. All sources of impressed current inspected and/or tested, as appropriate, at least every other month. NR 664.1095(3)(b)	NA	Tanks are not used at the facility	
E.7. Inspection schedule for subch. CC tank requirements, as stated in 664.1084 and 664.1088. NR 670.014(2)(e)	NA	Tanks are not used at the facility	
E.8. Inspection frequencies required by subch. CC for tanks are adequate to prevent environmental or human health incidents. NR 664.0015(2)(d)	NA	Tanks are not used at the facility	
Section F: Tank Standards – Existing Tanks NR 670.016(1)			
F.1. For each tank system installed before March 1, 1991, a written assessment reviewed and certified by an independent, qualified, registered PE as to the structural integrity and suitability for handling hazardous waste which includes the information in F.2. to F.8. NR 670.016(1)	NA	Tanks are not used at the facility	
F.2. Design standards for construction of the tank and ancillary equipment. NR 664.0191(2)(a)	NA	Tanks are not used at the facility	
F.3. Hazardous characteristics for the wastes handled. NR 664.0191(2)(b)	NA	Tanks are not used at the facility	
F.4. Existing corrosion protection measures. NR 664.0191(2)(c)	NA	Tanks are not used at the facility	
F.5. The age of the tank system, either documented or estimated. NR 664.0191(2)(d)	NA	Tanks are not used at the facility	
F.6. Results of a leak test, internal inspection or other tank integrity examination. NR 664.0191(2)(e)	NA	Tanks are not used at the facility	
F.7. If underground tanks cannot be entered, a leak test capable of taking into account the effects of temperature variations, tank end deflection, vapor pockets and high water table effects. NR 664.0191(2)(e)1.	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
F.8. If other tanks cannot be entered, a leak test or other integrity examination certified by a PE that addresses cracks, leaks, corrosion, and erosion. NR 664.0191(2)(e)2.	NA	Tanks are not used at the facility	
F.9. If, as a result of the assessment, the tank was found to be leaking or unfit for use, steps were taken to comply with F.10. to F.22. NR 664.0191(4)	NA	Tanks are not used at the facility	
F.10. Tank system or secondary containment system removed from service immediately. NR 664.0196	NA	Tanks are not used at the facility	
F.11. Flow of hazardous waste into the tank system or secondary containment system stopped immediately and the system inspected to determine the cause of the release. NR 664.0196(1)	NA	Tanks are not used at the facility	
F.12. If the release was from the tank system, as much waste as necessary was removed to prevent further releases and to allow inspection and repair of the tank system within 24 hours after detection or at the earliest practicable time. NR 664.0196(2)(a)	NA	Tanks are not used at the facility	
F.13. If the material was released to a secondary containment system, all released material was removed within 24 hours or in a timely manner to prevent harm to human health and the environment. NR 664.0196(2)(b)	NA	Tanks are not used at the facility	
F.14. Visual inspection of the release conducted. NR 664.0196(3)	NA	Tanks are not used at the facility	
F.15. Further migration of the spill to soils or surface water was prevented. NR 664.0196(3)(a)	NA	Tanks are not used at the facility	
F.16. Visible contamination of the soil or surface water was removed and properly disposed. NR 664.0196(3)(b)	NA	Tanks are not used at the facility	
F.17. Release reported to the Department within 24 hours of its detection, unless less than one pound was released and material was contained and cleaned up immediately. NR 664.0196(4)	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
F.18. Written report submitted to the Department within 30 days of detecting the release. NR 664.0196(4)(c)	NA	Tanks are not used at the facility	
F.19. System was returned to service after cleanup and repairs if the integrity of the tank system was not damaged. NR 664.0196(5)(b)	NA	Tanks are not used at the facility	
F.20. If the leak was from the tank system into secondary containment, the system was repaired before the tank was returned to service. NR 664.0196(5)(c)	NA	Tanks are not used at the facility	
F.21. If the leak was from a component that did not have secondary containment, either secondary containment will be provided or repairs are made if the component can be visually inspected. NR 664.0196(5)(d)	NA	Tanks are not used at the facility	
F.22. If major repairs were made, a PE certification was submitted to the Department within 7 days of returning the tank system to use. NR 664.0196(6)	NA	Tanks are not used at the facility	
Section G: Tank Standards – New Tanks NR 670.016(1) and NR 670.016(6)			
G.1. For each new tank system, a written assessment reviewed and certified by an independent, qualified, registered PE as to the structural integrity and suitability for handling hazardous waste which includes the information in G.2. to G.19. NR 670.016(1)	NA	Tanks are not used at the facility	
G.2. Design standards to which the tanks and ancillary equipment are constructed. NR 664.0192(1)(a)	NA	Tanks are not used at the facility	
G.3. Hazardous characteristics of the wastes to be handled. NR 664.0192(1)(b)	NA	Tanks are not used at the facility	
G.4. If the external shell of the metal tank or any external metal component of the tank system will be in contact with soil or water, a determination by a corrosion expert of factors affecting the potential for corrosion, including G.5. to G.9, at a minimum. NR 664.0192(1)(c)	NA	Tanks are not used at the facility	
G.5. Soil moisture content, pH, sulfides level, and resistivity. NR 664.0192(1)(c)1	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
G.6. Structure to soil potential. NR 664.0192(1)(c)1	NA	Tanks are not used at the facility	
G.7. Influence of nearby underground metal structures, such as piping. NR 664.0192(1)(c)1	NA	Tanks are not used at the facility	
G.8. Existence of stray electric current. NR 664.0192(1)(c)1	NA	Tanks are not used at the facility	
G.9. Existing corrosion-protection measures. NR 664.0192(1)(c)1	NA	Tanks are not used at the facility	
G.10. A description of materials and equipment used to provide external corrosion protection to ensure the integrity of the tank system during its use, including one or more of those in G.11 to G.13. NR 664.0192(1)(c)2	NA	Tanks are not used at the facility	
G.11. Corrosion-resistant materials of construction such as special alloys, fiberglass, reinforced plastic, etc. NR 664.0192(1)(c)2.a.	NA	Tanks are not used at the facility	
G.12. Corrosion-resistant coating with cathodic protection. NR 664.0192(1)(c)2.b.	NA	Tanks are not used at the facility	
G.13. Electrical isolation devices such as insulating joints, flanges, etc. NR 664.0192(1)(c)2.c.	NA	Tanks are not used at the facility	
G.14. For underground tank system components that are likely to be adversely affected by vehicular traffic, the design or operational measures that will protect the tank system against potential damage. NR 664.0192(1)(d)	NA	Tanks are not used at the facility	
G.15. Design considerations to ensure tank foundations will maintain the load of a full tank. NR 664.0192(1)(e)1.	NA	Tanks are not used at the facility	
G.16. Design considerations to ensure tank systems will be anchored to prevent flotation or dislodgment when the tank system is placed in a saturated zone. NR 664.0192(1)(e)2.	NA	Tanks are not used at the facility	
G.17. Design considerations to ensure tank systems will withstand the effects of frost heave. NR 664.0192(1)(e)3.	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
G.18. Foundation, structural support, seams, connections and pressure controls, if needed, are adequately designed to ensure the tank system will not collapse, rupture or fail. NR 664.0192(1)	NA	Tanks are not used at the facility	
G.19. The tank system has sufficient structural strength, compatibility with the wastes to be stored or treated and corrosion protection to ensure it will not collapse, rupture or fail. NR 664.0192(1)	NA	Tanks are not used at the facility	
G.20. A detailed description of how the tank systems will be installed in compliance with G.21. to G.28. NR 670.016(6)	NA	Tanks are not used at the facility	
G.21. Before covering, enclosing or placing a new tank system or component in use, an independent qualified installation inspector or registered PE who is trained and experienced in the proper installation of tank systems or components will inspect the system for the presence of weld breaks, punctures, scrapes of protective coatings, cracks, corrosion and other structural damage or inadequate construction or installation. NR 664.0192(2)	NA	Tanks are not used at the facility	
G.22. All structural damage or inadequate construction or installation will be remedied before the tank system is covered, enclosed or placed in use. NR 664.0192(2)	NA	Tanks are not used at the facility	
G.23. For tank systems or components placed underground, the backfill material is noncorrosive, porous and homogeneous, installed so the backfill is placed completely around the tank, and compacted to ensure the tank and piping are fully and uniformly supported. NR 664.0192(3)	NA	Tanks are not used at the facility	
G.24. All tanks and ancillary equipment will be tightness tested before being covered, enclosed or placed in use. NR 664.0192(4)	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
G.25. If the tank system is found not to be tight, all repairs necessary to remedy the leaks in the system will be performed before the tank system is covered, enclosed or placed into use. NR 664.0192(4)	NA	Tanks are not used at the facility	
G.26. Ancillary equipment is supported and protected against physical damage and excessive stress due to settlement, vibration, expansion or contraction. NR 664.0192(5)	NA	Tanks are not used at the facility	
G.27. The type and degree of corrosion protection recommended by an independent corrosion expert is provided. NR 664.0192(6)	NA	Tanks are not used at the facility	
G.28. If field fabricated, a corrosion expert will supervise the installation of the corrosion protection system to ensure proper installation. NR 664.0192(6)	NA	Tanks are not used at the facility	
Section H: Tank Standards – Secondary Containment NR 670.016(7) and NR 670.016(8)			
H.1. Detailed plans and description of how the secondary containment system for each tank system meets the requirements stated in H.2. to H.9. NR 670.016(7)	NA	Tanks are not used at the facility	
H.2. Designed, constructed and operated to prevent the migration of wastes or accumulated liquid out of the system to the soil, groundwater or surface water at any time during use of the tank system. NR 664.0193(2)(a)	NA	Tanks are not used at the facility	
H.3. Designed, constructed and operated to detect and collect releases and accumulated liquid until the material is removed. NR 664.0193(2)(b)	NA	Tanks are not used at the facility	
H.4. Constructed of or lined with materials that are compatible with the wastes to be placed in the tank system. NR 664.0193(3)(a)	NA	Tanks are not used at the facility	
H.5. Has sufficient strength and thickness to prevent failure due to pressure gradients, physical contact with the waste, climatic conditions and stress of daily operation. NR 664.0193(3)(a)	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
H.6. Placed on a foundation or base capable of providing support and resistance to pressure gradients above and below the system, and preventing failure due to settlement, compression or uplift. NR 664.0193(3)(b)	NA	Tanks are not used at the facility	
H.7. Provided with a leak detection system designed and operated to detect the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours or at the earliest practicable time unless demonstrated that existing detection technologies or site conditions will not allow detection of a release within 24 hours. NR 664.0193(3)(c)	NA	Tanks are not used at the facility	
H.8. Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills or precipitation. NR 664.0193(3)(d)	NA	Tanks are not used at the facility	
H.9. Spilled or leaked waste and accumulated precipitation will be removed from the secondary containment system within 24 hours or in a timely manner that prevents harm to human health and the environment if demonstrated that the material cannot be removed in 24 hours. NR 664.0193(3)(d)	NA	Tanks are not used at the facility	
H.10. Detailed plans and description of how an external liner system for each tank system meets the requirements stated in H.11. to H.14. NR 670.016(7)	NA	Tanks are not used at the facility	
H.11. Designed or operated to contain 100% of the capacity of the largest tank within its boundary. NR 664.0193(5)(a)1.	NA	Tanks are not used at the facility	
H.12. Designed or operated to prevent run-on or infiltration of precipitation into the external liner system unless the collection system has sufficient excess capacity to contain run-on or infiltration from a 25 year, 24 hour rainfall event. NR 664.0193(5)(a)2.	NA	Tanks are not used at the facility	
H.13. Free of cracks and gaps. NR 664.0193(5)(a)3.	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
H.14. Designed and installed to surround the tank completely and cover all surrounding earth likely to come into contact with the waste if a release from the tank (capable of preventing lateral and vertical migration of waste). NR 664.0193(5)(a)4.	NA	Tanks are not used at the facility	
H.15. Detailed plans and description of how a vault system for each tank system meets the requirements stated in H.16. to H.21. NR 670.016(7)	NA	Tanks are not used at the facility	
H.16. Designed or operated to contain 100% of the capacity of the largest tank within its boundary. NR 664.0193(5)(b)1.	NA	Tanks are not used at the facility	
H.17. Designed or operated to prevent run-on or infiltration of precipitation into the vault system unless the collection system has sufficient excess capacity to contain run-on or infiltration from a 25 year, 24 hour rainfall event. NR 664.0193(5)(b)2.	NA	Tanks are not used at the facility	
H.18. Constructed with chemical-resistant water stops in place at all joints. NR 664.0193(5)(b)3.	NA	Tanks are not used at the facility	
H.19. Provided with an impermeable interior coating or lining compatible with the stored waste to prevent migration of waste into the concrete. NR 664.0193(5)(b)4.	NA	Tanks are not used at the facility	
H.20. Provided with a means to protect against the formation and ignition of vapors within the vault, if the waste stored or treated is ignitable waste or reactive waste capable of forming ignitable or explosive vapor. NR 664.0193(5)(b)5.	NA	Tanks are not used at the facility	
H.21. Provided with an exterior moisture barrier or otherwise designed or operated to prevent migration of moisture into the vault if it is subject to hydraulic pressure. NR 664.0193(5)(b)6.	NA	Tanks are not used at the facility	

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Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
H.22. Detailed plans and description of how a double-walled tank system for each tank system meets the requirements stated in H.23. to H.25. NR 670.016(7)	NA	Tanks are not used at the facility	
H.23. Designed as an integral structure so that the outer shell contains any release from the inner tank. NR 664.0193(5)(c)1.	NA	Tanks are not used at the facility	
H.24. Protected, if constructed of metal, from both corrosion of the primary tank interior and of the external surface of the outer shell. NR 664.0193(5)(c)2.	NA	Tanks are not used at the facility	
H.25. Provided with a built-in continuous leak detection system capable of detecting a release within 24 hours or at the earliest practicable time if demonstrated that existing detection technology or site conditions would not allow detection of a release within 24 hours. NR 664.0193(5)(c)3.	NA	Tanks are not used at the facility	
H.26. Detailed plans and description of how ancillary equipment for each tank system will be provided with secondary containment except for aboveground piping; welded flanges, joints and connections; sealless or magnetic coupling pumps and sealless valves; and, pressurized aboveground piping systems with automatic shut-off devices that are visually inspected for leaks on a daily basis. NR 664.0193(6)	NA	Tanks are not used at the facility	
H.27. If seeking an alternative to the requirements of this section, detailed plans and engineering and hydrogeologic reports describing alternate design and operating practices; and, an evaluation of location characteristics which demonstrate the migration of hazardous waste or constituents into groundwater or surface water during the life of the facility is prevented. NR 670.016(8)(a)	NA	Tanks are not used at the facility	
H.28. If seeking an alternative to the requirements of this section, a detailed assessment of the substantial present or potential hazards posed to human health or the environment should a release enter the environment. NR 670.016(8)(b)	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
Section I: Tank Standards – Ignitable, Reactive and Incompatible Wastes NR 670.016(10)			
I.1. If ignitable or reactive waste is treated, rendered or mixed before or immediately after placement in the tank system, a description of how operating procedures and tank system and facility design will ensure the resulting waste, mixture or dissolved material no longer meets the definition of ignitable or reactive waste. NR 664.0198(1)(a)1.	NA	Tanks are not used at the facility	
I.2. If ignitable or reactive waste is treated, rendered or mixed before or immediately after placement in the tank system, a description of how operating procedures and tank system and facility design will ensure I.3. to I.7. will be met. NR 664.0198(1)(a)2.	NA	Tanks are not used at the facility	
I.3. Precautions taken to prevent reactions generating extreme heat or pressure, fire or explosions or violent reactions. NR 664.0017(2)(a)	NA	Tanks are not used at the facility	
I.4. Precautions taken to prevent reactions producing uncontrolled toxic mists, fumes, dusts or gases in sufficient quantities to threaten human health or the environment. NR 664.0017(2)(b)	NA	Tanks are not used at the facility	
I.5. Precautions taken to prevent reactions producing uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion. NR 664.0017(2)(c)	NA	Tanks are not used at the facility	
I.6. Precautions taken to prevent reactions damaging the structural integrity of the device or facility. NR 664.0017(2)(d)	NA	Tanks are not used at the facility	
I.7. Precautions taken to prevent reactions which, through other means, threaten human health or the environment. NR 664.0017(2)(e)	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - TANKS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
I.8. Documentation demonstrating compliance with I.2.. to I.7., including references to published scientific or engineering literature, data from trial tests, waste analysis or the results of treatment of similar waste by similar treatment under similar operating conditions. NR 664.0017(3)	NA	Tanks are not used at the facility	
I.9. If ignitable or reactive waste is placed in the tank system, an alternative to I.2. to I.8. is to provide a description of how operating procedures and tank system and facility design will ensure the waste is stored or treated in such a way that it is protected from any material or conditions that may cause the waste to ignite or react. NR 664.0198(1)(b)	NA	Tanks are not used at the facility	
I.10. If ignitable or reactive waste is placed in the tank system, an alternative to I.2 to I.8 or I.9. is to provide a description of how operating procedures, the tank system and facility design will ensure the tank system is used solely for emergencies. NR 664.0198(1)(c)	NA	Tanks are not used at the facility	
I.11. If the facility stores or treats ignitable or reactive waste in a tank, demonstrate compliance with the requirements to maintain protective distances between the waste management area and any public ways, streets, alleys or an adjoining property line that can be built upon, as required by Tables 2-1 to 2-6 of NFPA's "Flammable and Combustible Liquids Code. NR 664.0198(2)	NA	Tanks are not used at the facility	
I.12. Incompatible wastes are not placed in the same tank system unless the requirements in I.3. to I.8. are met. NR 664.0199(1)	NA	Tanks are not used at the facility	
I.13. Hazardous waste is not placed in a tank system that previously held an incompatible waste and has not been decontaminated unless the requirements of I.3. to I.8. are met. NR 664.0199(2)	NA	Tanks are not used at the facility	

PART II - UNIT REQUIREMENTS - MISCELLANEOUS UNITS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
Section J: Standards for Miscellaneous Units – Storage and Treatment NR 670.023			
J.1. Detailed description of the unit being used or proposed for use. NR 670.023(1)	FPOR Section 4.5.1		
J.2. Detailed description of the physical characteristics, materials of construction and dimensions of the unit. NR 670.023(1)(a)	FPOR Section 4.5.1		
J.3. Detailed plans and engineering reports describing how the unit will be located, designed, constructed, operated, maintained, monitored, inspected and closed to comply with J.4. to J.34. NR 670.023(1)(b)	FPOR Section 4.5.2		
J.4. Prevention of releases that may have adverse effects on human health or the environment due to migration of waste constituents in the groundwater or subsurface environment, considering items J.5. to J.13. NR 664.0601(1)	FPOR Section 4.5.3		
J.5. The volume and physical and chemical characteristics of the waste in the unit, including potential for migration through soil, liners or other containing structures. NR 664.0601(1)(a)	FPOR Section 4.5.4		
J.6. The hydrologic and geologic characteristics of the unit and surrounding area. NR 664.0601(1)(b)	FPOR Section 4.5.3		
J.7. The existing quality of groundwater, including other sources of contamination and their cumulative impact on groundwater. NR 664.0601(1)(c)	FPOR Section 4.5.3		
J.8. Quantity and direction of groundwater flow. NR 664.0601(1)(d)	FPOR Section 4.5.3		
J.9. Proximity to and withdrawal rates of current and potential groundwater users. NR 664.0601(1)(e)	FPOR Section 4.5.3		
J.10. Patterns of land use in the region. NR 664.0601(1)(f)	FPOR Section 4.5.3		

PART II - UNIT REQUIREMENTS - MISCELLANEOUS UNITS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
J.11. Potential of migration or deposition of waste constituents into subsurface physical structures and into the root zone of food-chain crops and other vegetation. NR 664.0601(1)(g)	FPOR Section 4.5.3		
J.12. Potential for health risks caused by human exposure to waste constituents. NR 664.0601(1)(h)	FPOR Section 4.5.3		
J.13. Potential for damage to domestic animals, wildlife, crops, vegetation and physical structures caused by exposure to waste constituents. NR 664.0601(1)(i)	FPOR Section 4.5.3		
J.14. Prevention of any releases that may have adverse effects on human health or the environment due to migration of waste constituents in surface water, wetlands, or on soil surface, considering J.15.- J.25. NR 664.0601(2)	FPOR Section 4.5.4		
J.15. Volume and physical and chemical characteristics of the waste in the unit. NR 664.0601(2)a.	Appendix NN Section 7.0		
J.16. Effectiveness and reliability of containing, confining and collecting systems and structures in preventing migration. NR 664.0601(2)b.	FPOR Section 4.5.4		
J.17. Hydrologic characteristics of the unit and the surrounding area, including the topography of the land around the unit. NR 664.0601(2)c.	FPOR Section 4.5.4		
J.18. Precipitation patterns in the region. NR 664.0601(2)d.	FPOR Section 4.5.4		
J.19. Quantity, quality and direction of groundwater flow. NR 664.0601(2)e.	FPOR Section 4.5.4		
J.20. Proximity of the unit to surface waters. NR 664.0601(2)f.	FPOR Section 4.5.4		
J.21. Current and potential uses of nearby surface waters and any water quality standards established for those surface waters. NR 664.0601(2)g.	FPOR Section 4.5.4		

PART II - UNIT REQUIREMENTS - MISCELLANEOUS UNITS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
J.22. Existing quality of surface waters and surface soils, including other sources of contamination and their cumulative impact on surface waters and surface soils. NR 664.0601(2)(h)	FPOR Section 4.5.4		
J.23. Land use patterns in the region. NR 664.0601(2)(i)	FPOR Section 4.5.4		
J.24. Potential for health risks caused by human exposure to waste constituents. NR 664.0601(2)(j)	FPOR Section 4.5.4		
J.25. Potential for damage to domestic animals, wildlife, crops, vegetation and physical structures caused by exposure to waste constituents. NR 664.0601(2)(k)	FPOR Section 4.5.4		
J.26. Prevention of releases that may have adverse effects on human health or the environment due to migration of waste constituents in the air, considering J.27. to J.33. NR 664.0601(3)	FPOR Section 4.5.4		
J.27. Volume, physical and chemical characteristics of the waste in the unit, including its potential for the emission and dispersal of gases, aerosols and particulates. NR 664.0601(3)a.	FPOR Section 4.5.5		
J.28. Effectiveness and reliability of systems and structures to reduce or prevent emissions of hazardous constituents to the air. NR 664.0601(3)b.	FPOR Section 4.5.5		
J.29. Operating characteristics of the unit. NR 664.0601(3)c.	FPOR Section 4.5.5		
J.30. Atmospheric, meteorologic and topographic characteristics of the unit and the surrounding area. NR 664.0601(3)d.	FPOR Section 4.5.5		
J.31. Existing quality of the air, including other sources of contamination and their cumulative impact on the air. NR 664.0601(3)e.	FPOR Section 4.5.5		
J.32. Potential for health risks caused by human exposure to waste constituents. NR 664.0601(3)f.	FPOR Section 4.5.5		

PART II - UNIT REQUIREMENTS - MISCELLANEOUS UNITS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
J.33. Potential for damage to domestic animals, wildlife, crops, vegetation and physical structures caused by exposure to waste constituents. NR 664.0601(3)g.	FPOR Section 4.5.5		
J.34. Inspection procedures and frequencies minimize or prevent releases that may have adverse effects on human health or the environment. NR 664.0602	FPOR Section 4.5.7		
J.35. Detailed hydrologic, geologic and meteorologic assessments and land-use maps for the region surrounding the site that address and ensure compliance of the unit with each factor in J.4. to J.33. NR 670.023(2)	FPOR Section 4.5.8		
J.36. Only preliminary hydrologic, geologic and meteorologic assessments are submitted if the applicant demonstrates they do not violate the environmental performance standards in J.4. to J.33. NR 670.023(2)	FPOR Section 4.5.8		
J.37. Information on the potential pathways of exposure of humans or environmental receptors to hazardous waste constituents and the potential magnitude and nature of exposures. NR 670.023(3)	FPOR Section 4.5.6		
J.38. For treatment units, a report on a demonstration of the effectiveness of the treatment based on laboratory or field data. NR 670.023(4)	FPOR Section 4.5.7.2		
J.39. Additional information necessary to evaluate if the unit complies with the environmental performance standards in J.4 to J.33., as determined by the department. NR 670.023(5)	NA	Additional information not requested by the Department.	

PART II - UNIT REQUIREMENTS - MISCELLANEOUS UNITS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
J.40. If an existing miscellaneous unit located in a 100-year floodplain is not designed, constructed, operated and maintained to prevent washout, a demonstration that no adverse effects on human health or the environment will result if washout occurs, considering the volume and physical and chemical characteristics of the waste, and the concentrations and potential impacts of hazardous constituents on surface waters, sediments or soils. NR 664.0018(2)(a)2.	NA	Facility is not located on a 100-year flood plain.	
J.41. If an existing miscellaneous unit is not in compliance with J.40. and there are no procedures to move the waste to a location that is not vulnerable to flood waters, a plan and schedule to bring the facility into compliance. NR 670.014(2)(k)5.	NA	Facility is not located on a 100-year flood plain.	

PART II - UNIT REQUIREMENTS - MISCELLANEOUS UNITS			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
J.42 An explanation of why the unit should not be regulated as a tanks system of container.	NA	<p>The mercury retort ovens are not containers since they are not portable devices.</p> <p><i>(NR 660.10(14) "Container" means any portable device in which a material is stored, transported, treated, disposed of or otherwise handled.)</i></p> <p>The mercury retort ovens are not tanks or a tank system since they are not designed to contain an accumulation of hazardous waste but rather are designed to expose materials to high temperatures.</p> <p><i>(NR 660.10(116) "Tank" means a stationary device, designed to contain an accumulation of hazardous waste which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.</i></p> <p><i>NR 660.10(117) "Tank system" means a hazardous waste storage or treatment tank and its associated ancillary equipment and containment system.)</i></p>	

Note: additional information may be required depending on the activities proposed to occur in a miscellaneous unit.

PART III - AA			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
Section K: Subch. AA – Air Emission Control Standards for Process Vents NR 670.024			
K.1. Documentation of compliance with the process vent standards in NR 664.1032, including K.2. to K.6. NR 670.024(2)	NA	Subpart AA not applicable to equipment at the facility	
K.2. A facility plot plan and information identifying the hazardous waste management units in the facility, the approximate location of each affected hazardous waste management unit in the facility and all affected process vents. NR 670.024(2)(a)	NA	Subpart AA not applicable to equipment at the facility	
K.3. Information on annual throughput and operating hours of each affected unit, estimated emission rates for each affected vent and the overall facility. NR 670.024(2)(a)	NA	Subpart AA not applicable to equipment at the facility	
K.4. Information and data supporting estimates of vent emissions and emission reduction achieved by add-on control devices based on engineering calculations or source tests. NR 670.024(2)(b)	NA	Subpart AA not applicable to equipment at the facility	
K.5. Estimates of vent emissions and emission reductions are made using operating parameter values that represent the conditions that exist when the waste management unit is operating at the highest load or capacity level reasonably expected to occur. NR 670.024(2)(b)	NA	Subpart AA not applicable to equipment at the facility	
K.6. Information and data used to determine whether or not a process vent is subject to NR 664.1032. NR 670.024(2)(c)	NA	Subpart AA not applicable to equipment at the facility	
K.7. Documentation of compliance with NR 664.1033, including information in K.8 to K.13. NR 670.024(4)	NA	Subpart AA not applicable to equipment at the facility	
K.8. List of all information references and sources used in preparing the documentation. NR 670.024(4)(a)	NA	Subpart AA not applicable to equipment at the facility	
K.9. Records, including the dates of each compliance test required by NR 664.1033(11). NR 670.024(4)(b)	NA	Subpart AA not applicable to equipment at the facility	

PART III - AA			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
K.10. Design analysis, specifications, drawings, schematics, and piping and instrumentation diagrams based on APTI Course 41.5 or other acceptable references. NR 670.024(4)(c)	NA	Subpart AA not applicable to equipment at the facility	
K.11. Design analysis addresses the vent stream characteristic and control device operation parameters specified in NR 664.1035(2)(d). NR 670.024(4)(c)	NA	Subpart AA not applicable to equipment at the facility	
K.12. Statement signed and dated by the owner/operator certifying the operating parameters used in the design analysis reasonably represent conditions that exist when the unit operates at the highest capacity reasonably expected to occur. NR 670.024(4)(d)	NA	Subpart AA not applicable to equipment at the facility	
K.13. Statement signed and dated by the owner/operator certifying the control device for the affected process vents is designed to operate at the required efficiency levels. NR 670.024(4)(e)	NA	Subpart AA not applicable to equipment at the facility	
K.14. If applying to use an alternate control device, a performance test plan if using test data. NR 670.024(3)	NA	Subpart AA not applicable to equipment at the facility	

PART III - BB			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
Section L: Subch. BB – Air Emission Control Standards for Equipment NR 670.025			
L.1. For each piece of equipment subject to subch. BB, the information in L.2. to L.7. NR 670.025(1)	NA	Subpart BB not applicable to equipment at the facility	
L.2. Equipment identification number and hazardous waste management unit identification. NR 670.025(1)(a)	NA	Subpart BB not applicable to equipment at the facility	
L.3. Approximate location within the facility, as identified on a facility plot plan. NR 670.025(1)(b)	NA	Subpart BB not applicable to equipment at the facility	
L.4. Type of equipment. NR 670.025(1)(c)	NA	Subpart BB not applicable to equipment at the facility	
L.5. Percent by weight total organics in the hazardous waste stream at each piece of equipment. NR 670.025(1)(d)	NA	Subpart BB not applicable to equipment at the facility	
L.6. Hazardous waste state (gas, vapor, etc.) at each piece of equipment. NR 670.025(1)(e)	NA	Subpart BB not applicable to equipment at the facility	
L.7. Method of compliance with the applicable subch. BB standard. NR 670.025(1)(f)	NA	Subpart BB not applicable to equipment at the facility	
L.8. Documentation demonstrating compliance with the equipment standards in NR 664.1052 to 664.1059, including records required by NR 664.1064. NR 670.025(4)	NA	Subpart BB not applicable to equipment at the facility	
L.9. Additional documentation necessary to determine compliance with the subch. BB standards. NR 670.025(4)	NA	Subpart BB not applicable to equipment at the facility	
L.10. Documentation demonstrating compliance with NR 664.1060 includes the information in L.11 to L.17. NR 670.025(5)	NA	Subpart BB not applicable to equipment at the facility	
L.11. List of all information references and sources used to prepare the documentation. NR 670.025(5)(a)	NA	Subpart BB not applicable to equipment at the facility	
L.12. Records, including the dates, of each compliance test required by NR 664.1033(10). NR 670.025(5)(b)	NA	Subpart BB not applicable to equipment at the facility	

PART III - BB			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
L.13. Design analysis, specifications, drawings, schematics and piping and instrumentation diagrams based on the appropriate sections of ATPI Course 415 or other engineering text that present basic control device design information. NR 670.025(5)(c)	NA	Subpart BB not applicable to equipment at the facility	
L.14. Design analysis addresses the vent stream characteristics and control device operation parameters in NR 664.1035(2)(d)3. NR 670.025(5)(c)	NA	Subpart BB not applicable to equipment at the facility	
L.15. Statement signed and dated by the owner/operator certifying the operating parameters used in the design analysis reasonably represent the conditions when the unit is operating at the highest capacity level reasonably expected to occur. NR 670.025(5)(d)	NA	Subpart BB not applicable to equipment at the facility	
L.16. Statement signed and dated by the owner/operator certifying the control device is designed to operate at an efficiency of ≥ 95 weight %. NR 670.025(5)(e)	NA	Subpart BB not applicable to equipment at the facility	
L.17. If applying to use an alternate control device, a performance test plan if using test data. NR 670.025(3)	NA	Subpart BB not applicable to equipment at the facility	

PART III - CC			
Licensing Standard and Code Citation	Location In FPOR (Page/Section/ NA)	Applicant Comments	Additional Instruction
Section M: Subch. CC – Air Emission Control Standards for Containers and Tanks NR 670.027			
M.1. Documentation for each floating roof cover installed on a tank subject to NR 664.1084(4)(a) or (b). NR 670.027(1)(a)	NA	Tanks not used at the facility	
M.2. Identification of each container area subject to subch. CC. NR 670.027(1)(b)	FPOR Section 4.10.1		
M.3. Owner/operator certification that the requirements of subch. CC are met for container storage areas. NR 670.027(1)(b)	FPOR Section 4.10.2		
M.4. Documentation for each enclosure used to control air emissions from containers per NR 664.1086(5)(a)2 and tanks per NR 664.1084(4)(e). NR 670.027(1)(c)	NA	Tanks not used at the facility VESTS does not utilize tanks, surface impoundments, closed vent systems, control devices, or Level 3 containers in its daily operations	
M.5. Records for the most recent set of calculations and measurements verifying the enclosure meets the criteria of a permanent total enclosure as specified by Procedure T in 40 CFR 52.741, appendix B. NR 670.027(1)(c)	NA	Tanks not used at the facility VESTS does not utilize tanks, surface impoundments, closed vent systems, control devices, or Level 3 containers in its daily operations	
M.6. Documentation for each closed-vent system and control device installed according to NR 664.1087, including design and performance information. NR 670.027(1)(e)	NA	Tanks not used at the facility Closed-vent systems and control devices not utilized at the facility for containers.	
M.7. An emission monitoring plan for Method 21 in 40 CFR part 60 Appendix A and control device monitoring methods. NR 670.027(1)(f)	NA	Tanks not used at the facility An emission monitoring plan not required under NR 670.027.	

Appendix LL

Facility and Operations Summary

Feasibility and Plan of Operation Report
Veolia ES Technical Solutions, LLC
EPA ID# WID988566543
FID# 246076050

General Facility Information

Facility Name, Site Operator and Address

Veolia ES Technical Solutions, LLC (VESTS)
Matthew Scudder, Operations Manager
1275 Mineral Springs Drive
Port Washington, WI 53074

Facility Owner

Veolia ES Technical Solutions, LLC (VESTS)
1275 Mineral Springs Road
Port Washington, WI 53074

Property Owner

Veolia ES Technical Solutions, LLC (VESTS)
1275 Mineral Springs Road
Port Washington, WI 53074

Facility Location

City of Port Washington.
Northwestern ¼ of the Southeastern ¼ of Section 32, Township 11 North, Range 22 East.
Latitude: 43 deg 22' 18.1" N, Longitude: 87 deg. 53' 19.1" W

Facility Contacts

Justin Provo – EH&S, Veolia ES Technical Solutions, 262 225 1043
Matthew Scudder – Operations Manager, Veolia ES Technical Solutions, 262-243-8912

License Hazardous Waste Storage and Treatment Units

License Number	Unit Description	Sub Unit Description	Unit Type	Capacity Limit
6008	Storage Room 1	Pod 1A	Storage	3,575 gallons
		Pod 1B	Storage	2,145 gallons
		Sub room	Storage	501 gallons
	Storage Room 2	Pod 2A	Storage	2,530 gallons
		Pod 2B	Storage	2,860 gallons
		Pod 2C	Storage	2,475 gallons
	Storage Room 3	Pod 3A	Storage	935 gallons
		Pod 3B	Storage	840 gallons
		Pod 3C	Storage	746 gallons
		Pod 3D	Storage	1,100 gallons
		Pod 3E	Storage	980 gallons
		Pod 3F	Storage	1,100 gallons

License Number	Unit Description	Sub Unit Description	Unit Type	Capacity Limit
4585	Retort Room	R3	Miscellaneous Treatment	Total treatment capacity is not to exceed 25,000 pounds per day
		R4	Miscellaneous Treatment	
		R5	Miscellaneous Treatment	

1. Facility Description and Operation

Veolia ES Technical Solutions (VESTS) Treatment Storage and Disposal Facility (TSDF) consists of the hazardous waste container storage units and the mercury recovery/retort operations. On March 12, 2024, the Wisconsin Department of Natural Resources (WDNR) issued a call-in letter to begin the renewal process for the fourth hazardous waste operating license. The TSDF operates under EPA I.D. # WID988566543 and Department FID # 246076050 and is located at 1275 Mineral Springs Drive, Port Washington, Wisconsin.

The TSDF manages a wide variety of hazardous waste for primarily industrial clientele. Hazardous wastes from other generators are stored and consolidated in the TSDF until a substantial load of wastes can be collected on a route-run with licensed transport vehicles. In this manner, economical waste disposal is available to industrial and state and local government agencies and the TSDF functions as a regulatory benefit to large and small quantity generators. VESTS accepts waste from off-site generators which provides logistical support assisting generators in the shipment of those wastes within the generator's prescribed accumulation period. Such wastes can be transported and stored in the TSDF (within the permitted storage capacity) until proper disposal can be achieved. This practice reduces storage violations at generators and provides professional management of the waste. Furthermore, the TSDF provides a service to the local community for hazardous waste storage (pending disposal) of miscellaneous small quantity waste from municipal agencies such as the Highway Department, Fire Department, and Police Department.

The TSDF also serves as a permanent household hazardous waste (HHW) collector under s. NR 666.909 Wisconsin Administrative Code (WAC) whereby local residents can dispose of wastes such as pesticides and herbicides, used paint thinners, paint, and household batteries. The ability to consolidate wastes is also a benefit that is consistent with federally mandated waste minimization laws.

The facility also operates as a large quantity handler of universal waste handler and a destination facility for mercury containing lamps, articles and devices which may be treated on site. The facility also collects universal waste batteries and computer equipment for sorting and then off-site shipment.

To process the universal waste lamps, VESTS operates three fluorescent lamp recycling units that are located in the northern section of the building. The recycling operation recovers the fluorescent lamp components, including glass, aluminum, electronic bases from compact fluorescent lamps (CFL) and mercury bearing phosphor powder. The mercury bearing phosphor powder is treated in the on-site mercury retort system. The other three waste streams generated as byproducts from the fluorescent light recycling operations are sent off site for recycling or disposal.

The facility also operates three mercury reclamation/recovery retort units located in the western section of the building. The retort ovens are used to process the following waste streams, including but not limited to:

- ◆ phosphor powder generated during the lamp recycling operations;
- ◆ soils;
- ◆ sulfur-impregnated activated carbon;

- ◆ mercury contaminated sludge;
- ◆ scrap metals contaminated with mercury;
- ◆ neon, ultraviolet (UV) and high intensity discharge (HID) contaminated lamps and glass;
- ◆ mercury-containing devices (e.g., gas regulators);
- ◆ mercury-containing articles (e.g., switches and batteries);
- ◆ mercury-containing glass products (e.g., thermometers);
- ◆ mercury-bearing compounds (e.g., mercuric oxide); and
- ◆ mercury-contaminated debris (e.g., personal protective equipment)

The process of reclaiming the elemental mercury is accomplished by heating the ovens to a temperature sufficient to volatilize the mercury contained in the waste. A vacuum is applied during heating. The mercury vapors are then condensed, and the liquid mercury accumulates in the condenser tank or vacuum chamber and is then transferred into a metric ton keg. Once the keg is full, the mercury is marketed.

1.1 General Location

VESTS is located at 1275 Mineral Springs Drive in the Northwestern $\frac{1}{4}$ of the Southeastern $\frac{1}{4}$ of Section 32, Township 11 North, Range 22 East, in the City of Port Washington, Ozaukee County, Wisconsin. The Hazardous Waste TSDF is located in an industrial park on the southern edge of Port Washington. Mineral Springs Drive borders the property toward the east. Mineral Springs Drive intersects Sunset Road approximately $\frac{1}{4}$ mile north of the site. Maritime Drive borders the property toward the south.

No parks, hospitals, or nursing homes are located within $\frac{1}{2}$ mile of the facility. A correctional facility is located approximately $\frac{1}{2}$ mile west of the facility.

1.2 Zoning

The areas to the immediate north, south, and east of the property are zoned industrial and currently contain light manufacturing industries. The area immediately west of the property is zoned industrial and is a commercial storage facility.

1.3 Current Site Buildings

The facility consists of the following structures:

- ◆ The VESTS office building houses administrative offices.
- ◆ The process building consists of the loading dock area, the storage pods, the household hazardous waste collection area, the 90-day hazardous waste storage area, the retort room, universal waste storage areas, and the lamp processing area. A connected building contains the two lamp machines and roll-off bins for glass and plastic.
- ◆ The chiller and air handler for the retort room are located off the northwest corner of the main process building.
- ◆ An emergency generator is located off the northeast corner of the main process building.

- ◆ An additional chiller is located to the west of the retort area outside of the retort/storage building.
- ◆ Areas within the fenced property include:
 - Areas to receive and stage bulk transports and trailers
 - Areas provided for bulk loading and unloading
 - Areas to hold empty non-placarded tankers and trailers
 - Roll-off bins holding recyclable materials or solid waste

1.4 Facility Recent Compliance History

The most recent agency inspection occurred on December 6, 2023, by U.S. Environmental Protection Agency (EPA). EPA issued a Written Informal Violation report dated August 9, 2024. Veolia submitted the written response to EPA dated September 9, 2024, and as of the date of this submittal, is waiting to receive feedback from EPA about a return to compliance.

On August 23, 2023, the WDNR conducted Land Disposal Restriction (LDR) Compliance Evaluation Inspection (CEI) resulting in a notice of noncompliance (NON) issued on April 24, 2024, and closed out.

On June 17, 2023, August 23, 2023, and November 14, 2023, the WDNR conducted Generator and Universal Waste – Large Quantity Handler CEIs resulting in NONs issued on June 24, 2023, and November 13, 2023, and closed out on December 13, 2023.

Additional routine WDNR inspections were conducted between 2015 and 2022 that resulted in no compliance issues or minor NONs which were resolved.

1.5 Waste Analysis Plan

In order to ensure proper hazardous waste handling and storage, a Waste Analysis Plan is used for waste received into the TSDF. The Waste Analysis Plan outlines how the TSDF will comply with the requirements of NR 670.014(2)(b) and (c) and NR 664.013. The goals of the Waste Analysis Plan include being able to identify and separate waste types that are incompatible, ensure proper handling procedures are identified for various waste types, and ensure that waste types handled are included in the facility permit.

The Waste Analysis Plan identifies the necessary pre-acceptance procedures, incoming load procedures, process operations procedures, and quality control policies for hazardous wastes that enter VESTS for storage and treatment.

VESTS requires the generator to submit a certified waste profile based on generator knowledge (e.g., past waste disposal company profiles or a detailed chemical and physical analysis of a representative sample of their waste s. NR 664.0013(2)(e) WAC). In accordance with s. NR 664.0013(2)(f) WAC, the profile will be assessed for unique potential incompatibility issues the waste stream may have with respect to specific management methods (s. NR 664.0017(3) WAC). In addition, the profile will be evaluated to determine whether the waste stream is subject to the NR 664 Subchapter CC standards for containers, as required under s. NR 664.1083 WAC. The profile will also be evaluated to determine whether chemical analysis indicates the waste meets or exceeds the hazardous waste LDR standards as required under s. NR 668.07 WAC. If using laboratory analysis, the generator located in the State of Wisconsin,

must use a State of Wisconsin certified and registered laboratory and use analytical methodologies required in chapter NR 219 WAC and NR 664.0013(1)(a)1 WAC. Field analysis of pH, specific conductance and temperature will be acceptable. If a generator requires virgin material to be stored at the TSDF, the generator may submit a Safety Data Sheet outlining detailed chemical and physical properties. The profile may include data developed under chapter NR 661 WAC and existing published data on the hazardous waste or on data from hazardous waste generated from a similar process.

The majority of the waste containing mercury received from off-site generators is generated as a result of spills, articles, or devices containing mercury being taken out of service, or fluorescent lights destined for recycling. Although the wastes do not meet the definition of unused chemicals, the physical and chemical properties of such wastes will not have changed from those of the original material. As such, it is anticipated that a description of the waste is sufficient to satisfy the waste analysis requirements. Profiles for mercury-containing articles and mercury-contaminated debris will be evaluated to determine if they contain recoverable amounts (e.g., presence of free mercury). In accordance with s. NR 666.100(4)(b)1 WAC, the profiles will be evaluated to determine whether the waste contains less than 500 parts per million by weight (ppmw) total NR 661 Appendix VIII organic constituents. Wastes that contain less than 500 ppmw Appendix VIII organic constituents will then be evaluated for their heating content. Wastes with less than 5,000 British Thermal Unit per pound (BTU/lb) will be designated as being acceptable for retort under s. NR 666.100(4)(b)2 WAC. Wastes that contain greater than 5,000 BTU/lb will be evaluated to determine whether the waste is specifically listed in NR 666 Appendix XIII. If the waste is included in Appendix XIII, the waste will be approved for retorting in accordance with s. NR 666.100(4)(c) WAC.

If the waste is not specifically listed in Appendix XIII, the waste will not be approved for retort. If the generator does not provide certification, the waste must be tested for total organic compounds and total semi-volatile compounds. Wastes exhibiting a toxicity characteristic of s. NR 661.0024 WAC for an organic constituent will not be accepted for retort. Hazardous wastes listed in Subchapter D of chapter NR 661 WAC because it is listed for an organic constituent, as identified in Appendix VII of NR 661, will not be accepted for retort.

1.6 Waste Handling

Hazardous waste containers retained in the TSDF are kept closed and sealed to ensure minimal vapor escape and to prevent spillage if the containers were accidentally overturned. Drums (Department of Transportation [DOT] approved containers typically 85 gallons or 55 gallons) are sealed tightly with a top head and bolt ring or a bung cap. Other intermediate sized containers are sealed with tight-fitting lids (e.g., metal, plastic, and polyethylene). Drums and containers are checked for proper sealing upon receipt into the TSDF and on a weekly inspection as part of the inspection and recordkeeping procedures.

Containers holding ignitable or reactive waste are located at least 50 feet from the facility's property line. Drums and containers are opened in the TSDF when an inspection is conducted or a representative sample is required for verification of properly manifested waste, or when adding or removing (e.g., consolidating) waste to the drum. Drums and containers are opened with non-sparking tools (e.g., brass bung wrench) to prevent ignition of flammable vapors. Drums and containers such as lab packs may be repacked into larger sized containers or different material type containers (e.g., fiber vs. metal) to facilitate proper and economic

disposal at off-site Resource Conservation and Recovery Act (RCRA) disposal sites. The inside containers of lab packs (e.g., reagent bottles) may be consolidated or commingled. Lab packs from different generators may be repackaged or commingled in the same outside container and re-profiled as TSDf generated waste. The TSDf recordkeeping procedures will track the status of each individual container during storage and to the final off-site RCRA treatment disposal site.

Handling of drums through the TSDf is done through use of a drum cart or forklift. Handling in this manner minimizes the possibility of drum rupture or spilling. Other smaller volume containers are carefully handled in an upright position to prevent leakage from the lid area. Storage of drums and containers are completed according to proper segregation into the appropriate storage rooms and pods. These drums will be segregated in accordance with DOT requirements. In order to allow for the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to any area of the facility in an emergency, an aisle space of at least 24 inches will be maintained in the storage pods. The 24 inches of aisle space is based on the approximate diameter of a 55-gallon drum. If a drum was found to be leaking, it could be removed without having to move other drums. Alternatively, a 55-gallon drum could be easily brought into a pod, in order to transfer the contents of a leaking drum to a new drum.

The TSDf also handles containers smaller than 55-gallon drums. Spacing is maintained between the containers so that an inspection can be made for possible leaks. No drums or intermediate sized containers are stored in walkways, doorways, or adjacent building areas. When cubic yard boxes, bags, and pallets are stored inside a pod, the aisle space is increased. An increased aisle space allows for the movement of pallets for access to any leaking containers. Smaller containers may be stored on top of larger containers in a manner that prevents accidental tipping.

1.7 Container Storage – License #6008

The TSDf is divided into three separate hazardous waste storage rooms (see Table 1 below). The three hazardous waste storage rooms have a total surface area of approximately 2,430 square feet (sf). Only containers (no tanks) of hazardous waste are stored in the rooms. The maximum hazardous storage capacity is 19,787 gallons, with the permitted storage capacity at 20,000 gallons. Containers stored inside the hazardous storage rooms typically range in size and are packaged in DOT approved non-bulk and bulk containers. Containers are properly covered and closed to minimize the potential of air emissions or leakage of waste.

The hazardous waste storage rooms were constructed in 1989 in accordance with the National Fire Protection Association “Liquid Warehouse” standard for flammable liquids. The WDNR approved the design of the storage rooms during the TSDf’s initial licensing activities. The rooms consist of four-hour fire prevention concrete walls, ceiling, and floor. The storage of ignitable and reactive wastes are located at least 50 feet from the property line. The storage of hazardous waste containers, which are incompatible with other wastes or materials, are segregated in separate rooms and/or separated by berms or walls.

Each hazardous waste storage room has a continuous base, sealed, concrete floor and is divided into pods that are segregated by floor, sealed concrete berms. The front area of the pods has a raised walkway to allow for the removal or placement of hazardous waste

containers. This walkway in itself serves as a berm in front of each pod. Although the concrete floors of the storage pods are sloped to facilitate drainage, containers are stored on a raised steel grate to prevent contact with any freestanding liquid within each pod that may occur from a spill. The steel grate is level with the sub room entrances. In addition, a portable peristaltic pump is retained at the facility for emergency removal of spilled hazardous wastes. Sections of the steel grate would be removed to gain access to the spilled material. Spilled material would be contained and moved away from the contaminated area until the spill could be mitigated. The spilled waste will be removed and analyzed from the containment area in a timely manner to prevent overflow.

As described in Table 1, the capacity of the secondary containment system in each pod is greater than 10% of the volume of the containers or the volume of the largest container, whichever is greater. With the exception of containers of F020-F023 and F026-F028 wastes, containers without free liquids are not considered for the capacity limits.

Storage Rooms 1 and 3 have two access points each. One access is to the outside and the other to the loading dock area. Storage Room 2 has three access points for Pods 2A and 2B. Pod 2C has two access points. The access points for Room 2 are from the loading dock area and the area east of the mercury retort room. Access points are equipped with fire doors and are only accessible to authorized VESTS personnel.

Storage Room 1 is divided into two pods segregated by floor sealed 3.5-inch-high concrete berm. Each pod has 3.5 inches deep-raised entrances that serve as berms. Storage Room 1 contains a sub room constructed with a two-hour fire prevention concrete walls, door, ceiling, and floor.

Storage Room 2 is divided into three pods. Pods 2A and 2B are segregated by floor sealed 6-inch-wide and 2-feet-high concrete wall. Pods 2B and 2C are segregated by a floor sealed 6-inch-wide and 3.5-inch-high concrete berm. The area comprising Pods 2A and 2B pod have three access points. Pod 2C has two access points.

Storage Room 3 is divided into six pods segregated by floor sealed 6-inch-wide and 2-feet-high impervious concrete walls.

Table 1
Hazardous waste container storage summary

License Number	Unit Description	Sub Unit Description	Storage Capacity (gallons)	Storage Area (sf)	Secondary Containment Capacity (gallons)	Percentage of Storage Volume (%)
6008	Storage Room 1	Pod 1A	3,575	360	785	22
		Pod 1B	2,145	232	507	24
		Sub room	501	68	148	30
	Storage Room 2	Pod 2A	2,530	394	860	34
		Pod 2B	2,860	400	873	31
		Pod 2C	2,475	336	733	30
	Storage Room 3	Pod 3A	935	98	214	23
		Pod 3B	840	95	207	25
		Pod 3C	746	98	214	29
		Pod 3D	1,100	117	255	23
		Pod 3E	980	114	249	25
		Pod 3F	1,100	118	257	23

1.8 Tanker and Roll-Off Bulking

Note: Bulking operations are not currently conducted at the facility. Prior to initiating any bulking activities, VESTS will submit a formal notification to the WDNR to ensure full compliance with all applicable RCRA regulations and permit requirements governing such operations.

Liquid drums of hazardous and nonhazardous wastes to be bulked into tankers are stored in the storage pods. Prior to pumping, the drums are moved to the loading dock area. The storage pods are designed to be able to contain a minimum of 10% of the total volume of wastes stored and on average are designed to contain 30% of the volume stored. The specific spill retention capacity of the storage pods is described in Section 5.5.1 of the Feasibility and Plan of Operation Report (FPOR). The loading dock area is comprised of a continuous base concrete slab designed to contain any spills that would occur during loading/unloading procedures. The floor is designed to slope away from the doors to prevent any spills from escaping the building. The tanker will be parked in the south loading dock area during the bulking operation. A portable collection basin is placed under the hosing connections prior to conducting the bulking operation to collect any incidental residue from hosing connections or disconnection.

The existing trailer parking area is comprised of a concrete slab, sloped to aid in spill containment. At the base of the slope is a drain trench. The drain trench has been sealed and the outlet is locked closed. If a spill were to occur, the spill would be contained in this area and would be pumped into the vacuum truck. The transport tankers will then be placed directly into transport for off-site disposal.

The bulking of hazardous waste drummed solids into roll-off boxes occurs in the south loading dock. The floor of the area is concrete and is able to contain any spilled solids. Spilled solids can be simply swept up and placed into the roll-off. The roll-off box will be placed directly into transport by manifesting the waste to the off-site disposal location.

1.9 Treatment – License #4585

During the issuance of the August 7, 2012, call-in letter, the WDNR requested the existing mercury recovery (retort) operating units be added to the license application as miscellaneous units. As a result, the mercury retort system is licensed as miscellaneous hazardous waste treatment units. The effective date for the initial licensing of these units as miscellaneous treatment units was October 1, 2015. See Section 1.10 of this document for more information about the Mercury Retort Units.

1.10 Description of the Mercury Retort Units

Three (3) mercury reclamation/recovery retort units are located in the western section of the building. The room is in a portion of the originally constructed and permitted facility. The retort room is a segregated 2,070 sf room. The room is constructed of an impervious concrete floor, concrete block walls and built-up roof. The room has an isolated ventilation system, which collects and controls the fugitive mercury emissions from the retort room. The mercury recovery/retort room is used to unpack, sort, process and retort mercury-contained devices, mercury containing compounds and solutions, and mercury contaminated debris.

The retort units are identified as R3, R4, and R5. The retort units' sources and control devices are covered under a WDNR Pollution Control Operating Permit and Wisconsin Regulations s. NR 439.11 WAC. On March 25, 2019, the WDNR Bureau of Air Management issued Operation Permit No: 246076050-S02 and identifies the operations as the following processes (P), stacks (S), control devices (C) and fugitive emissions (F).

P10: RipSys Retort Natural Gas fired Oven (R3) equipped with a scrubber reservoir/packed column condensing system using chilled water to condense the mercury. Sulfur-impregnated carbon adsorber (C09) collects the mercury vapor not trapped by the condensing system. The air emissions then discharge through the process stack (S11) to the retort room stack (S14) equipped with sulfur-impregnated carbon adsorber (C10). The natural gas combustion by-products from P10 pass through a heat exchanger (C12), then through sulfur-impregnated carbon adsorber (C15) and then flue stack (S12).

- ◆ P11: Magna Drum Retort Natural Gas fired Oven (R4) a scrubber reservoir/packed column condensing system using chilled water to condense the mercury. Sulfur impregnated carbon adsorber (C09) collects the mercury vapor not trapped by the condensing system. The air emissions then discharges through the process stack (S11) to the retort room stack (S14) equipped with sulfur-impregnated carbon adsorber (C10). The natural gas combustion by-products from P10 pass through a heat exchanger (C13), then through sulfur-impregnated carbon adsorber (C13), and then flue stack (S13).
- ◆ P14: Wisconsin Oven Corporation Natural Gas-fired Retort Oven (R5) equipped with three in series condensers chilled with propylene glycol to condense the mercury. Sulfur impregnated carbon adsorber (C11) collects the mercury vapor not trapped by the condensing system. The air emissions then discharges through the process stack (S15) to the retort room stack (S14) equipped with sulfur-impregnated carbon adsorber (C10). The natural gas combustion by-products from P14 pass through a heat exchanger (C14), then through two parallel sulfur-impregnated carbon adsorber (C14) units, and then flue stack (S17).
- ◆ F99: The fugitive emissions from the retort room (F99) discharge through the retort room stack (S14) equipped with the Waterlink Barnebey Sutcliffe HECA-500- 24/CB11 Carbon Absorber (C10).

1.10.1 RipSys (R3) and Magna Drum (R4) Retort Natural Gas Fired Ovens (P10 and P11)

Retort units R3 and R4 are natural-gas heated chambers. Both oven chambers (P10 and P11) are used to process the drummed mercury contaminated wastes including phosphor powder generated during the lamp recycling operations; soils; sulfur-impregnated activated carbon; and mercury contaminated sludge. In addition, scrap metals contaminated with mercury; neon, UV and HID contaminated lamps and glass may be processed in drums or a specially designed kettle in P11. The restrictions to the types of mercury-contaminated debris acceptable for retort processing is described in the FPOR. The process of reclaiming the elemental mercury is accomplished by heating the closed drums or kettle in the convection heated chamber to a temperature sufficient to volatilize the mercury contained in the waste. A vacuum is applied to the drums or kettle during heating. The mercury vapors are then condensed with water in a scrubber and packed tower. The liquid mercury accumulates in the condenser tank and then transferred into a metric ton keg. Once the keg is full, the mercury is marketed. The retort time

cycle for P10 and P11 depend upon the type and composition of the waste materials. Sulfur-impregnated carbon adsorber (C09) collects the mercury vapor not trapped by the condensing system. The air emissions then discharge through the process stack S11 to the retort room stack (S14) equipped with sulfur-impregnated carbon adsorber (C10). The natural gas combustion by-products from P10 pass through a heat exchanger (C13), then through sulfur-impregnated carbon adsorber (C13) and then flue stack (S13).

1.10.2 P14 One Natural Gas Retort Oven (R5) (Wisconsin Oven Retort System) which replace two Electric Ovens (P12)

One other mercury reclamation/recovery retort unit is located in the retort room. This unit, R5, (P14) is a natural gas fired retort oven (Wisconsin Oven Retort System) and replaces Process P12 (two ASE MR25 Retort Ovens, R1 and R2). The facility should not impact the mercury emissions as the mercury condensing system previously used on Process P12 will be used on Process P14 by the facility. Air quality permit 246076050-S02 establishes emission limitations and emission control equipment operating parameters. In accordance with current air pollution control regulations and the air quality permit application review, these mercury emissions controls are not subject to “best available control technology.”

Mercury containing devices (e.g., gas regulators), mercury-containing articles (e.g., switches and batteries), mercury-containing glass products (e.g., thermometers), mercury-containing lamps (e.g., HID), mercury-bearing compounds (e.g., mercuric oxide), and mercury contaminated debris (e.g., PPE) are placed in vacuum vessels and then placed into the oven. The oven will also accept drummed mercury contaminated wastes including phosphor powder generated during the lamp recycling operations; soils; sulfur-impregnated activated carbon; and mercury contaminated sludge. The restrictions to the types of mercury-contaminated debris acceptable for retort processing is described in the FPOR. The process of reclaiming the elemental mercury is accomplished by heating the oven chamber to a temperature sufficient to volatilize the mercury contained in the waste. A vacuum is applied to the drums and vacuum vessel during heating. The mercury vapors are then condensed inside a series of vacuum chambers lined (condensers) with tubes containing propylene glycol. The liquid mercury accumulates in the vacuum chambers and is then transferred into a metric ton keg. Once the keg is full, the mercury is marketed. The retort time cycle for P14 depends upon the type and composition of the waste materials.

Sulfur-impregnated carbon adsorber (C11) collects the mercury vapor not trapped by the condensing system. The air emissions then discharge through the process stack S15 to the retort room stack (S14) equipped with sulfur-impregnated carbon adsorber (C10).

1.10.3 Retort Room Fugitive Emissions (F99)

The retort room has an isolated ventilation system, which collects and controls the fugitive mercury emissions generated during opening containers, de-packing containers, and sorting debris and devices prior to retorting in the retort room (F99). These emissions are captured by a 5,000 cubic feet per minute blower, which pulls the air emission through a pre-filter, a high efficiency particulate air (HEPA) filter, and the 7,700 pounds of sulfur impregnated carbon contained in the Waterlink Barnebey Sutcliffe HECA-500-24/CB11 Carbon Absorber.

1.10.4 Operation of Units

The above sources and control devices are covered under a WDNR Pollution Control Operating Permit 246076050-S02 (issued by the WDNR's Air Management Program) which adopts construction permits 01-DJH-339-OP, 01-DJH-339-OP-R, and 13-KB-181. The TSDF's Malfunction Prevention and Abatement Plan (MPAP) has established inspection, maintenance, and corrective action procedures necessary to ensure the air pollution control devices are operating properly. The control devices and the MPAP prevent release to the atmosphere.

Under Operating Permit 246076050-S02, the air emissions from consolidated stack S14 are monitored daily with a mercury vapor monitor such as the Arizona Instruments Jerome 431X portable mercury monitoring unit or equivalent. The mercury vapor monitor sampling tube is inserted into an opening to the stack and the internal sampling pump on the meter draws a sample which passes over or through a detector and the unit calculates a concentration of mercury in the air stream. The result is displayed on the unit and the result is recorded on the air monitoring logs maintained by VESTS. VESTS also has a Mercury Instruments VM3000 meter for back up monitoring. The Jerome 431X and VM3000 units are sent annually for certification and calibration. These records are available for review at VESTS. The pressure drop across the Waterlink Barnebey Sutcliffe HECA-500-24/CB11 Carbon Absorber or equivalent is measured once every eight hours of source operation or once per day by reading the magnihelic gauge. The reading is recorded on air monitoring logs maintained by VESTS.

Annually, VESTS submits to the Department an Air Emissions Inventory Summary Report summarizing and presenting the overall mercury emissions.

Several residues, waste streams, and by-products are generated as a result of the mercury retorting operations, including:

- ◆ Post retort phosphor powder
- ◆ Post retort debris/devices
- ◆ Unprocessed debris with unrecoverable mercury content (e.g., empty pails)

One sample per month is collected from a batch of post retort phosphor powder and analyzed for total and toxicity characteristic leaching procedure (TCLP) mercury content. The post retort phosphor powder is then accumulated as a commercial product and may be sold for rare earth recovery. If the recovery of rare earth elements is not possible, the post retorted phosphor powder is managed as a solid waste.

Post retort debris/devices is sampled on batch basis and analyzed for total and TCLP mercury content. Post retort debris/devices will be managed for underlying constituents and waste codes as necessary (e.g., leaded glass from neon lights).

The unprocessed debris with unrecoverable mercury will be shipped off site for microencapsulation as a D009.

Other wastes are generated from the operations. The type of waste and how they are managed are described below:

- ◆ Mercury contaminated carbon, pre-filters, and HEPA absorption filters are accumulated in drums and then processed through the retort ovens to recover the captured mercury.
- ◆ Mercury contaminated waters are accumulated in containers and shipped off site for disposal.
- ◆ Potentially mercury contaminated condensate water from the natural gas combustion. Because the flue gas will pass through a heat exchanger, moisture will condense and will be collected as water in totes before the flue gases enter the pre-filter and activated carbon filter. The totes will be located inside the retort room. The water will be collected in the drums and initially managed as a hazardous waste characteristic for TCLP mercury (D009). Monthly samples will be collected of the water and tested for the first year of operation (12 total samples). After one year, the sampling will be completed annually. The quantities of condensate water generated is dependent upon the amount of natural gas consumed during a period of time and the ambient moisture content in the outside air feeding the combustion chamber.

The product resulting from the mercury retort system is the mercury that is recovered, transferred into a metric ton keg, and marketed as a valuable product. The mercury reclaimed from the operations is shipped off site for further purification.

1.11 Household Hazardous Waste

VESTS operates a Permanent Collection Facility under chapter NR 666 Subchapter HH, whereby local residents can deliver wastes such as pesticides and herbicides, used paint thinners, paint, and household batteries for safe management and subsequent disposal. HHWs are principally collected/accepted at VESTS in the designated HHW area. The majority of the HHW are packaged in their original containers into DOT approved shipping containers. In some instances, HHWs are consolidated or commingled into other hazardous waste streams, as appropriate. This consolidation or commingling occurs in the storage pods. The resulting container is then stored in the permitted storage pods.

1.12 Universal Waste

Universal waste destined for processing at the VESTS is stored in the hazardous waste storage rooms and may include batteries, thermostats, mercury-containing lamps, mercury-containing articles, and mercury-containing devices. The universal wastes are stored or packaged in accordance with the DOT regulations. Containers stored inside the hazardous storage rooms typically range in size and are packaged in DOT approved non-bulk and bulk containers. Some universal wastes may be manifested to the facility, but the majority of the universal waste will be received by the facility on bill-of-lading or other shipping papers.

The majority of the projected volumes and weights of universal wastes to be stored within the hazardous waste storage rooms will be mercury containing thermostats and equipment. However, these universal wastes may also include mercury-containing lamps. The largest percentage of these lamps will be 4-foot fluorescent lamps. Each 4-foot lamp weighs approximately 0.62 pounds, which equates to approximately 0.075 gallons and will be used as a conversion factor for the lamps stored in the area. The other universal waste will be weighed and converted to gallons using a specific gravity of 8.34 pounds per gallon. Accumulation times for stored universal wastes will vary, however, the maximum storage period is one year.

1.13 Fluorescent Light Recycling

VESTS operates two fluorescent lamp recycling units at the facility. One of the fluorescent lamp recycling units includes a CFL feed system which separates the lamp portion of the CFL from the electronic base. The recycling operation recovers the fluorescent lamp components, including glass, aluminum, electronic bases from CFLs and mercury bearing phosphor powder. The two lamp recycling machines are located in the northern section of the building. The waste streams generated from the fluorescent light recycling operations including:

- ◆ Lamp glass
- ◆ Lamp aluminum end-caps
- ◆ CFL electronic bases
- ◆ Pre-retort phosphor powder

One sample per month is collected from both the lamp glass and lamp aluminum end-caps and tested for TCLP mercury and total mercury concentrations. The CFL bases are tested annually for TCLP mercury and total mercury. The pre-retort phosphor powder is accumulated into 55-gallon drums and then retorted on site. Mercury contaminated carbon, pre-filters, and HEPA filters are accumulated in drums and then processed through the retort ovens to recover the captured mercury.

The lamp processing sources and control devices are covered under air quality permit 246076050-S02.

1.14 Used Oil Management

VESTS accepts used oil at the facility for storage and transfer and is classified as a Used Oil Transporter and Transfer Facility. The used oil is stored in 55-gallon drums on skids equipped with secondary containment. The used oil may be pumped to a tanker for transport and recycling at an off-site facility.

1.15 Nonhazardous Solid Waste Storage and Processing – License #3870

VESTS conducts non-hazardous solid waste storage and processing at the facility. Operations include consolidation, phase separation, and solidification in drums. Details of the solid waste operations are presented in the August 22, 2001, Plan Modification to the Plan of Operation for the facility as submitted to the WDNR. The VESTS non-hazardous solid waste storage and processing was originally approved by the WDNR on September 18, 1995, and was subsequently modified on August 26, 1997, and on December 8, 1997.

1.16 Storm Water Permitting - S067857-5

Storm water run-off from the facility is covered by VESTS Storm Water Pollution Prevention Plan and is written in compliance for Wisconsin Pollutant Discharge Elimination System general permit for Tier 2 Industrial Facilities, permit S067857-5. Surface water from the southern asphalt paved area (approximately 2.7 acres) flows into the catch basins located in the center of the parking lot and directly east of the office building.

Surface water runoff that is collected in the main storm sewer is routed north and discharges into a wetland located on the northern portion of VESTS property. The discharge flow in the sewer is controlled by valve located east of the building. The valve remains normally closed and is only manually opened to allow for drainage into the wetland. The wetland drains in the northeast corner of the property along Mineral Springs Drive.

Two storm water laterals connect into the storm sewer. One lateral is from the trench drain located in the covered south loading dock area of the facility. This trench drain has been sealed and locked. The other lateral is from the roof drains of the office building and the southern portion of the facility (approximately 12,600 sf).

Two roof drains are associated with the middle-north portion of the facility (approximately 3,600 sf), lamp feed station area. One drain discharges to the paved surface on the northeast corner of the building. The second drain discharges to a grassy area northwest of the building.

The storm water runoff from the northern asphalt portion of the site (approximately 16,000 sf) sheet drains to a natural area to the north. The remaining portions of the site consist of landscaped grassy areas surrounding the building and outside the fenced area to the south along the roadways. An un-landscaped, natural area and the retention pond comprise approximately 6.9 acres of the northern portion of the site. Storm water in these areas directly infiltrates soil.

The active portions of the site are graded to minimize off-site drainage from entering the site. The active portions of the site are sloped to contain all storm water within the site boundaries. According to VESTS, erosion does not occur at the site.

1.17 Air Pollution Control Permits

On March 25, 2019, the WDNR Bureau of Air Management issued Operation Permit No: 246076050-S02. VESTS has the following emission units:

- ◆ P01: Model 2000 Lamp Recycler, equipped with a Donaldson – Torit TD Cartridge Filter System (C01) and carbon adsorber (C02) and discharges to Stack S01. This unit has a capacity to process 2,500 4-foot (T12 – 1.5-inch diameter) lamps per hour.
- ◆ P08: Model LSSI Lamp Recycler equipped with a HEPA PM Collector (C04) and carbon adsorber (C05) and discharges to Stack S08. This unit has a capacity to process 4,000 4-foot (T12 – 1.5-inch diameter) lamps per hour.
- ◆ S14: Retort room Stack equipped with a carbon adsorber (C10) controlling discharges from process Stacks S11 and S15, and F99 (fugitive emissions from retort room).
- ◆ P10: RipSys Retort Oven equipped with electronic with electronic afterburner (C07) and carbon adsorber (C09) and discharges through process Stack S11 to retort room. Flue gas goes to flue Stack S12 (equipped with air-to-air heat exchanger (C12) and activated carbon adsorber with particulate filter (C15)).
- ◆ P11: Magna Drum Retort Oven equipped with electronic afterburner (C08) and carbon adsorber (C09) and discharges through process Stack S11 to retort room. Flue gas goes

to flue Stack S13 (equipped with air-to-air heat exchanger (C13) and activated carbon adsorber with particulate filter (C16)).

- ◆ P14: Natural gas fired retort oven by Wisconsin Oven Corporation equipped with carbon adsorber (C11) and discharge through process Stack S15 to retort room. Flue gas goes to flue Stack S17 (equipped with air-to-air heat exchanger (C14) and activated carbon adsorber with particulate filter (C17)).
- ◆ P13: Generac SD500 Emergency Generator (diesel fuel fired) which discharges through Stack S16.

1.18 NR 664 Subchapter AA Standards

Subchapter AA standards apply to air emissions from process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction or air or steam stripping operations that manage hazardous wastes with organic concentrations of at least 10 ppmw. VESTS does not have any equipment subject to subchapter AA standards.

1.19 NR 664 Subchapter BB Standards

Subchapter BB standards apply to air emissions from equipment that contains or contacts hazardous waste with organic concentrations of at least 10% by weight. There are specific monitoring and reporting requirements based on the type of equipment. However, applicable equipment that contains or contacts hazardous waste for less than 300 hours per calendar year is excluded from the inspection and monitoring requirements of these standards. VESTS does not have any equipment subject to subchapter BB standards.

1.20 NR 664 Subchapter CC Standards

Subchapter CC standards apply to air emissions from tanks, surface impoundments and containers that manage hazardous wastes containing an average organic concentration of greater than or equal to 500 ppmw at the point of waste origination. Containers of hazardous wastes that are transferred through the facility that are still in the course of transportation are exempt from subchapter CC. Specific exemptions to these requirements are outlined in NR 664 subchapter CC WAC.

Containers typically received and managed at this facility include, but not limited to 5-gallon, 15-gallon, 30-gallon, 55-gallon and 250-gallon containers. These containers typically meet applicable DOT specifications and/or authorizations. Containers greater than 26 gallons that are managing site generated hazardous waste are visually inspected upon their initial filling and within one year if the container is not completely emptied of its contents.

Containers less than or equal 121 gallons are acceptable for use in accordance with Level 1 controls. Containers greater than 121 gallons are acceptable for use in accordance with Level 2 controls. Hazardous waste containers less than 26 gallons in capacity or hazardous waste in a vacuum truck are exempt under subchapter CC. Stabilization of waste in containers does not occur at the facility.

1.21 Traffic Information (NR 670.014(2)(j))

The principal travel route for trucks traveling to the TSDF is from Wisconsin State Highway 32 (Spring Street) located west of the TSDF. From Spring Street, truck traffic will take Maritime Drive to the east and turn north onto Mineral Springs Drive to the facility. The truck routes to and from the TSDF are shown on Drawing D-4, Area Street Map.

Current traffic volume counts for the area near the TSDF have been recorded by the DOT for Annual Average Daily Traffic (AADT¹). The nearest volume count locations included Sunset Road (County Highway CC) west of County Highway C (1500 AADT), Sunset Road east of State Highway 32 (2500 AADT), State Highway 32 south of Sunset Road (7500 AADT), and State Highway 32 south of Maritime Drive (10,700 AADT). Based on an average of 15 trucks per day visiting the TSDF, the facility traffic volume is a relatively small portion of the AADTs for the surrounding area.

A typical cross-section of the roadways near the TSDF is shown as Drawing D-5, Roadway Typical Cross Section in the FPOR. According to the Port Washington Public Works Department, the roadways near the TSDF do not have weight or bearing capacity restrictions.

The traffic routing at the TSDF consists of entering and exiting from Mineral Springs Drive through a security gate and loading or unloading at the necessary location at the facility. A truck parking area is used in the southeast corner of the facility for off-duty vehicles. Truck activities are concentrated to and from the loading dock area on the north and south sides of the TSDF. Personal vehicles use the same entrance to the site as trucks, but park in designated parking areas along the edge of the asphalt in the northeast corner of the facility.

The driveway areas of the TSDF, including the parking areas and loading dock drive area, are constructed of asphalt. The construction of these areas included a 3-inch layer of asphalt covering 8-inch thickness of $\frac{3}{4}$ -inch crushed limestone, treated with a traffic binder. The load bearing capacity of the asphalt pavement is 3,000 pounds per square feet.

1.22 Service Area

VESTS, through its licensed hazardous waste facilities, provides hazardous waste services to generators of hazardous wastes, including small and large industries, commercial operations, retail stores, remediation contractors, and local, state, and federal government agencies across the United States. The TSDF's service area includes Wisconsin, Minnesota, Illinois, Indiana, Michigan, Ohio, Iowa, Kentucky, Nebraska, Missouri, Kansas, North and South Dakota. The TSDF affords the generators in Wisconsin and EPA Region V an economical waste disposal alternative, promotes the regulatory compliance, and provides a well-managed and secure method for managing wastes.

1.23 On-Site Hazardous Waste Generation

Wastes generated by VESTS's operations include empty containers, absorbents, contaminated PPE, clean-up wastes and spills of wastes.

¹ * Source of AADT Information as of March 2025:

<https://wisdot.maps.arcgis.com/apps/webappviewer/index.html?id=2e12a4f051de4ea9bc865ec6393731f8>

1.24 FPOR Licensing History – First Operating License

The first EPA RCRA Part A hazardous waste license application for the facility was submitted to the WDNR on October 9, 1987, by then owner Aqua-Tech, Inc. Subsequently, Aqua-Tech received the first Hazardous Waste Operating License on December 27, 1989, for a storage facility with a maximum storage capacity of 10,000 gallons. The license duration period was a fixed term not-to-exceed 10 years from the date of issuance, which ended December 27, 1999. During the term of the first operating license, the TSDf was issued, modifications of ownership including from Aqua-Tech to Mineral Springs Corporation (September 23, 1991) and to Superior Hazardous Waste Group, Inc. (September 30, 1993). On October 31, 1996, the WDNR approved a Class 1 Modification associated with the name change of the company to Superior Special Services, Inc.

1.25 FPOR Relicensing History - Second Operating License

On May 27, 1999, the FPOR was submitted as part of the application for the second operating license for the TSDf. On May 17, 2001, the WDNR issued a Notice of Incompleteness (NOI) letter associated with the May 27, 1999, FPOR submittal. Subsequent responses were made by Superior on September 10, 2001, and September 13, 2001, and to the EPA on February 14, 2002, and February 27, 2002. The WDNR issued a second notice of incompleteness on March 25, 2002. Responses were submitted on May 14, 2002, and July 11, 2002. On December 26, 2002, a Class 1 plan modification for a name change from Superior to Onyx Special Services, Inc. was issued by the WDNR. A notice of completeness and a preliminary determination was issued by the WDNR on July 15, 2003. On September 17, 2003, the WDNR determined that an environmental impact statement was not needed for the FPOR changes. On September 25, 2003, the WDNR issued the Final Determination to Conditionally Approve the FPOR. On February 6, 2004, the WDNR issued the second Hazardous Waste Operating License #6008 for Container Storage Facility to Onyx Special Services. The license duration period for the second license was a fixed term not-to-exceed 10 years from the date of issuance to February 6, 2014.

1.26 FPOR Relicensing History – Third Operating License

On April 5, 2004, Onyx Special Services, Inc. submitted a Class 1 modification request to transfer the ownership and change of name to Onyx Environmental Services, L.L.C. On June 25, 2005, the WDNR issued a Conditional Class 1 Modification Determination for the name change. On June 27, 2006, Onyx submitted a Class 1 modification request to the WDNR for a name change to VESTS. On June 28, 2006, the WDNR issued a Class 1 Plan Modification Preliminary and Final Determination for the name change.

On August 7, 2012, the WDNR issued a call-in letter to begin the renewal process for the third hazardous waste operating license. The call-in letter requested the existing mercury recovery (retort) operating units be added to the license application as miscellaneous units.

On January 4, 2013, VESTS submitted a request for relief on the one-year storage limitation for elemental mercury that is subject to the Mercury Export Ban Act (MEBA). On January 17, 2013, the WDNR issued a letter indicating the WDNR would use its enforcement discretion to allow VESTS to store elemental mercury that is subject to MEBA for more than one year provided that VESTS complies with the conditions in the letter.

On September 4, 2015, the WDNR issued a final determination to approve the FPOR for VESTS submitted on August 6, 2013, December 6, 2013, January 27, 2014, September 6, 2014, and January 23, 2015. The expiration date of the 10-year effective period of the operating license is October 8, 2025.

1.27 Past Department Hazardous Wastes Decisions

Since the original FPOR approval was issued, a number of approvals, determinations, and modifications have been issued to the facility. The dates and a summary of the approvals, determinations and modifications are listed in Table 2.

Table 2
Past Department Hazardous Waste Decisions

Date of Decision	Description of Decision
December 27, 1989	Original FPOR approval.
September 23, 1991, to June 28, 2006	Class 1 Modifications for name changes from Aqua-Tech, Mineral Springs Corporation, Superior Hazardous Waste Group, Inc., Onyx Special Services, Inc., Onyx Environmental Services, LLC, Veolia ES Technical Solutions, LLC
May 27, 1992	Expanding the maximum storage capacity of the facility from 10,000 gallons to 20,000 gallons.
June 1992	Addition of bulking and containerization operations.
January 27, 1997	Class 2 Modification regarding the addition of newly listed waste codes that were published in the EPA final rule in the February 9, 1995, Federal Register.
June 18, 1998	Class 1 Modification to add 12 waste stream to the list of waste.
November 13, 1998	WDNR issued a call-in letter.
May 17, 2001	Notice of Incompleteness (NOI) letter associated with the May 27, 1999, FPOR
March 25, 2002	Second notice of incompleteness
September 17, 2003	WDNR determined that an environmental impact statement was not needed for the FPOR changes
September 25, 2003	Final Determination to Conditionally Approve the FPOR
February 6, 2004	WDNR issued the second Hazardous Waste Operating License #6008 for container Storage Facility to Onyx Special Services
July 16, 2012	WDNR issued an acknowledgement of the modification update to the FPOR – Contingency Plan

Table 2-2 (continued)

Date of Decision	Description of Decision
August 7, 2012	WDNR issued a call-in letter to begin the renewal process for the third hazardous waste operating license
January 17, 2013	WDNR issued a Request for Relief on the One Year Storage Limitation for Elemental Mercury (pertaining to the Mercury Export Band Act of 2008 MEBA)
November 8, 2013	VESTS issued a letter regarding the intent to submit a proposed modification to the Miscellaneous Units - Mercury Recovery/Retort Operations covered in the Feasibility and Plan of Operation Report.
April 11, 2018	VESTS submitted a Class 1 License Modification Request, to make modifications to enhanced mercury emission control devices and operational controls for the three mercury recovery ovens (retorts) flue stacks. In submittals dated June 13, 2018, August 27, 2018, and October 30, 2019, VESTS subsequently modified the request after WDNR review comments.
March 31, 2021	VESTS submitted a Class 2 License Modification Request in accordance with Condition 17e of the WDNR Class 1.1 License Modification Determination (Conditional Approval) dated June 23, 2020. Specifically, Condition 17e required making the submission of a Corrective Action Plan (CAP). On June 29, 2021, the WDNR responded with a NOI that included 12 different identified issues with the submittal. VESTS submitted the revised CAP revision 1 along with a response to the NOI comments as requested on November 4, 2021. The WDNR responded on February 3, 2022, to this submittal with a Class 2 Modification Final Determination and Conditional Approval.
March 12, 2024	WDNR issued a call-in letter to begin the renewal process for the fourth hazardous waste operating license

1.28 Past Environmental Analysis

An analysis of the need for an environmental impact statement (EIS) was performed by the WDNR as part of both the first (1990) and the second hazardous waste licensing on September 25, 2003. The analysis of the expected impacts of the proposal for the initial facility concluded that it was not a major action that would significantly affect the quality of the environment. As such, an EIS was not required for the initial license issuance for the current facility. The environmental review associated with the September 2015 preliminary determination updates the original Environmental Assessment completed on September 25, 2003, and confirms that an EIS was not needed.

1.29 Closure

VESTS expects to operate the facility for the foreseeable future. The FPOR includes a detailed closure plan and cost estimates for completing closure of the entire facility. The closure plan includes the cost estimates of the money needed to remove the maximum allowable quantity

of hazardous waste stored at the facility and decontamination procedures for all of the surfaces and equipment in the licensed container storage and the mercury recovery/retort operation-miscellaneous unit. The current cost estimate to close and decontaminate the hazardous waste facility covered by this determination is \$2,565,171.82. (see Table 3).

Table 3
2025 Closure Cost Summary

Unit Name	Cost
Facility Closure Contingency	\$233,197.44
Facility Wide	\$866,850.00
HW Storage Unit-Closure Debris	\$51,768.40
HW Storage Unit-HW Inventory	\$1,103,999.96
Mercury Recover/Retort Operation	\$162,682.52
Outdoor Emission Control Equipment	\$146,673.50
Total	\$2,565,171.82

1.30 Corrective Action

When the initial state license and federal permit were issued in 1989, corrective action was not required since there were no known releases. On April 25, 2002, the WDNR conducted a RCRA Facility Assessment inspection as part of facility RCRA relicensing. As a result of the inspection and additional information in WDNR files, a RCRA Facility Assessment (RFA) Report dated July 3, 2003, was prepared which examined the waste streams at the facility, identified Solid Waste Management Units (SWMUs), documented releases which occurred at the facility, and identified Areas of Concern in accordance with the EPA RFA guidance and WDNR Waste Management Program Corrective Action Guidance. On October 22, 2003, the WDNR issued a memorandum indicating the RFA had become final and there were no public comments.

Under Condition 23 of the WDNR's September 25, 2003, approval entitled "Final Determination to Conditional Approval", the TSDF was required to develop and submit a Work Plan for a RCRA Facility Investigation (RFI) to address the findings of the RFA. On November 25, 2003, the RFI Work Plan was submitted to the WDNR. On January 6, 2004, the WDNR issued their approval to the RFI Work Plan.

On June 15, 2004, Montgomery Watson Harza issued a report outlining the initial RFI results and requested approval to complete additional testing. The WDNR granted verbal approval for the additional sampling on June 21, 2004. The final RFI Report was submitted to the WDNR on October 19, 2004. In addition, on November 10, 2004, a follow-up letter was submitted to the WDNR regarding additional sampling results associated with SWMU #9.

In accordance with Condition 17e of the WDNR Class 1.1 License Modification Determination (Conditional Approval) dated June 23, 2020, VESTS submitted a Class 2 License Modification dated March 31, 2021. Specifically, Condition 17e required making the submission of a Corrective Action Plan (CAP). The CAP included a detailed description of all work needed to complete corrective action ("Remaining Work" as of January 1, 2021). A Site Investigation

Report was submitted to the WDNR on February 18, 2021. On June 29, 2021, the WDNR responded with a NOI that included 12 different identified issues with the submittal. VESTS submitted the revised CAP (CAP revision 1) along with a response to the NOI comments on November 4, 2021. The WDNR responded on February 3, 2022, to this submittal with a Class 2 Modification Final Determination and Conditional Approval.

The most recent CAP update was submitted by AECOM on behalf of VESTS on March 1, 2024, with a revision date of May 31, 2024.

1.31 Need Analysis

VESTS, through its existing licensed TSDF, provides hazardous and universal waste services, as well as mercury containing waste recycling/retort services to generators, including electrical contractors, utilities, small and large industries, commercial operations, retail stores, remediation contractors, and local, state, and federal government agencies. The service area routinely covered by VESTS includes the upper Midwest but provides mercury recovery operations for customers across the United States. VESTS is one of a few companies in Wisconsin that provides our services through a licensed TSDF. The TSDF affords the generators in Wisconsin and EPA Region V an economical waste disposal alternative, promotes regulatory compliance, and provides a well-managed and secure method for managing wastes.

Over the past 38 years, the TSDF has been in operation, the hazardous waste collection, transportation, and disposal industry has consolidated and many firms have gone out of business. While waste minimization efforts by generators have reduced the overall volume of waste requiring storage, and ultimately treatment and disposal, VESTS recognizes their services are still needed by the regulated community. VESTS has advanced its capabilities to service the generators of universal waste. The facility has changed over the years through independent submittals to the WDNR to cover the regulatory aspects of managing and recycling universal waste. In order to fulfill the generators' needs, VESTS is seeking a license to continue the operation of the existing TSDF. VESTS is not seeking any planned expansions of the TSDF.

1.32 Owner Financial Responsibility

The updated cost estimate for the final closure of VESTS' hazardous waste storage licensed activities is \$2,565,171.82. The closure cost estimate is adjusted annually for inflation. VESTS is required to maintain on file with the WDNR adequate proof of financial responsibility to cover the cost of closure. Currently VESTS has on file a closure surety bond for proof of financial responsibility needed for closure, which has an effective date of August 6, 2024, in the amount of \$2,236,497.51. Upon approval of the updated closure plan and associated cost estimate included with the FPOR submittal, VESTS will provide the WDNR with an updated surety bond.

VESTS maintains a pollution liability insurance policy for sudden environmental releases of at least \$4,000,000 per occurrence and \$8,000,000 annual aggregate.

VESTS has a corrective action surety bond on file with the WDNR in accordance with s. 291.37(2) since VESTS is subject to corrective action per s. 291.37. The surety bond has an effective date of May 18, 2024, in the amount of \$1,287,917.69.

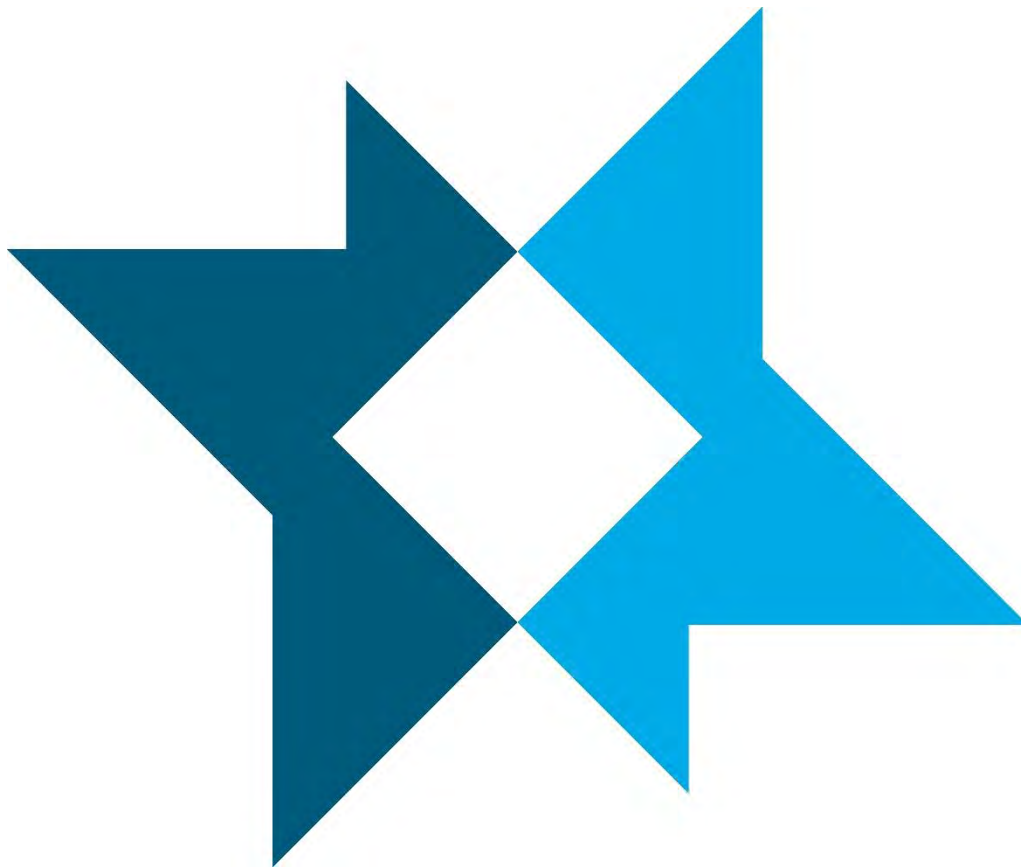
Appendix MM

Environmental Assessment and Environmental Justice Review



Report

Environmental Assessment and Environmental Justice Review



Veolia ES Technical Solutions, LLC

Port Washington, Wisconsin

April 2025

Project ID: 24V007

**Solving our clients' toughest
science and engineering challenges.**

Environmental Assessment and Environmental Justice Review

Project ID: 24V007

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Prepared by
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April 2025

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Environmental Assessment and Environmental Justice Review

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Environmental Assessment and Environmental Justice Review

Executive Summary

Veolia ES Technical Solutions, LLC is performing a 10-year renewal of their existing Treatment, Storage, and Disposal Facility (TSDF) license for the facility located at 1275 Mineral Springs Drive in the northwestern ¼ of the southeastern ¼ of Section 32, Township 11 North, Range 22 East, in the city of Port Washington, Ozaukee County, Wisconsin. The TSDF is located in an industrial park on the southern edge of Port Washington. As part of the 10-year renewal process, a Feasibility and Plan of Operation Report (FPOR) is being submitted; this report serves as an update to the 2015 FPOR Environmental Assessment.

The previous Environmental Assessment was performed in 2015. This appendix provides updated documentation to facilitate any potential detrimental impacts caused by the continued existence of the facility. This appendix also provides a comprehensive Environmental Justice review.

Based on the findings of this appendix, no changes are proposed and no detrimental impacts to reviewed resources are proposed to occur due to the continued existence of the TSDF.

List of Abbreviations, Acronyms, and Symbols

CEQ	Council on Environmental Quality
cm/sec	centimeter per second
EA	Environmental Assessment
EJ	Environmental Justice
Foth	Foth Infrastructure & Environment, LLC
FPOR	Feasibility and Plan of Operation Report
IPaC	Information for Planning and Consultation
NRCS	National Resources Conservation Service
NOAA	National Oceanic and Atmospheric Administration
RCRA	Resource Conservation and Recovery Act
TSDF	Treatment, Storage, and Disposal Facility
USEPA	United States Environmental Protection Agency
VESTS	Veolia ES Technical Solutions, LLC
WBIC	Waterbody Identification Code
WDNR	Wisconsin Department of Natural Resources
WI_ASOS	Wisconsin Surface Weather Observation Stations
WWI	Wisconsin Wetland Inventory

1. Introduction – NR 670.014(2)(x)2.a.

Hazardous waste receiving facilities are regulated by the United States Environmental Protection Agency (USEPA) under the oversight of the Wisconsin Department of Natural Resources (WDNR). The WDNR exercises complete authority over on-site activities, including renewal of each facility's Feasibility and Plan of Operation Report (FPOR). These renewal processes integrate contemporary regulations into ongoing management and operations.

Veolia ES Technical Solutions, LLC (VESTS) is currently performing the 10-year renewal for their existing Treatment, Storage, and Disposal Facility (TSDF) FPOR consisting of hazardous waste container storage units and mercury recovery/retort operations being classified as miscellaneous units located at 1275 Mineral Springs Drive, Port Washington, Wisconsin (EPA I.D. WID988566543, WDNR FID# 246076050). The TSDF also operates as a destination facility for the recycling of universal waste including mercury containing lamps and mercury containing devices. The TSDF also serves as a permanent household hazardous waste collector under NR 666.909. Figure 1 illustrates the site location of this facility.

To complete the renewal, the following appendix was compiled to supplement the existing 2015 Environmental Assessment (EA) and a complete Environmental Justice (EJ) review was performed. The first USEPA Resource Conservation and Recovery Act (RCRA) Part A hazardous waste license application for the facility was authorized on December 27, 1989, and had an initial EA dated April 9, 1986. Updated maps and supplemental information have been collected to support the review. Any updated information used to facilitate this review has been included as part of this appendix. Additional historical information about the facility is provided in Section 1 of the FPOR.

2. Proposed Physical Changes – NR 670.014(2)(x)2.b.

At the time of this FPOR renewal, no changes are proposed. Due to this, no updates to the following sections of the EA were part of this appendix:

- ◆ Traffic Patterns and Roadways
- ◆ Material and Soil Excavation and Placement
- ◆ Access Roads
- ◆ Soil Erosion and Runoff Control
- ◆ Aquatic Resources
- ◆ Facility Closure
- ◆ Location of Buildings
- ◆ Emissions and Discharges

There are no parks, hospitals, or nursing homes located within ½ mile of the facility. Additionally, there are no known areas of archeological or historical significance on the property. There is a correctional facility located approximately ½ mile west of the facility. The areas to the immediate north, south, and east of the property are zoned industrial and currently contain light manufacturing industries. The area immediately west of the property is zoned industrial and is a commercial storage facility. Lake Michigan is approximately 0.5 mile east of the facility. A current zoning district map for the city of Port Washington is provided on Drawing D-7 in the FPOR. (NR 670.014(2)(x)2.c.3)).

3. Existing Environmental Setting – NR 670.014(2)(x)2.c.

At the time of the FPOR renewal, no changes are proposed. Due to this, no updates for the following sections of the EA were provided as part of this appendix:

- ◆ Land Use
- ◆ Geology
- ◆ Archeological or Historical Significance

3.1 Topography – NR-670.014(2)(x)2.c.1)

Although no changes are proposed, an updated contour map has been generated for the site (Figure 2).

3.2 Soils

The soils of the area formed mainly in material laid down by glaciation. The project area is located within the Kewaunee-Manawa Soil Association. The National Resources Conservation Service (NRCS) Soil Survey Map (Appendix A) indicates six soil map units within the facility boundary:

- ◆ Kewaunee silt loam, 2 to 6 percent slopes
- ◆ Kewaunee silty clay loam, 2 to 6 percent slopes
- ◆ Kewaunee silty clay loam, 6 to 12 percent slopes
- ◆ Kewaunee silty clay, 12 to 20 percent slopes
- ◆ Manawa silt loam, 0 to 3 percent slopes
- ◆ Poygan silty clay loam, 0 to 2 percent slopes

However, much of the facility has been previously altered by grading and filling operations with much of the site's surface area being paved or overlain with Clayey landfill material.

3.3 Water Resources – NR 670.014(2)(x)2.c.1)

This site is located in the Sauk and Sucker Creeks watershed (Figure 3). Surface water runoff from the area near the TSDF primarily flows into two catch basins. The main storm water catch basin, located to the southeast of the TSDF, collects surface water runoff from the truck parking areas and the area leading to the loading docks. Surface water runoff that is collected in the main storm sewer is routed north and discharges into a retention basin located on the northern portion of VESTS' property. If above capacity, the retention basin overflows into the northeast corner of the property along Mineral Springs Drive. Drainage features for the site are shown on Drawing D-2 Drainage Features, of the FPOR.

The facility has developed and implemented a Storm Water Pollution Prevention Plan as required under coverage of the Wisconsin Pollution Discharge Elimination System Tier 2 General Stormwater Permit - #S067857-5.

As required in NR 670.014(2)(k)3., according to National Flood Insurance Program flood boundary and floodway maps, the site is not located within the 100-year floodplain. The location of the 100-year floodplain relative to the site is shown on Figure 4.

According to the Wisconsin Wetland Inventory (WWI) map, included as Figure 5, an area classified as 'W0H' or 'open water' is located directly north of the TSDF. The 'open water' on the WWI map is the retention basin previously described. An area of emergent vegetation (cattails) has formed in the northern portion of the basin (WDNR, 2025a) labeled 'E2H' or 'Emergent/wet meadow' on the WWI map. No active or past operations of the TSDF are located in the wetlands (NR 670.014(2)(k)6.b.).

The general surface water flow from the TSDF is toward the northeast, via an "unnamed stream/river" (Waterbody Identification Code (WBIC) 49600) that combines with Sauk Creek before eventually discharging to Lake Michigan approximately 1½ miles northeast of the TSDF. WBIC 496000 is not on the *2024 Water Condition List: Appendix A 2024 Impaired Waters List*, illustrated on Figure 6.

A sedimentation basin is located on the south side of Maritime Drive approximately 100 feet southwest of the TSDF. This basin is upgradient and therefore does not receive runoff from the TSDF.

Groundwater in the vicinity of the TSDF occurs in the glacial deposits and generally flows east towards Lake Michigan. Regional groundwater flow in the glacial and bedrock aquifers is east towards Lake Michigan. The glacial aquifer in the region consists of sand and gravel deposits, but in the vicinity of the TSDF, these deposits are not extensive. Below the glacial aquifer are two major bedrock aquifers that are separated by an aquitard. These bedrock aquifers are the dolostone aquifer and the sandstone aquifer, which are hydraulically separated by the Maquoketa Shale. There are no on-site wells on the property. The closest well to the TSDF is approximately 0.22 miles to the northeast and is approximately 158 feet in depth (WDNR, 2025b).

Based on the finding of the RCRA Facility Investigation in 2004, the depth to groundwater is likely to be approximately 10 feet below ground surface. The groundwater may be perched, and the actual depth to the regional water table may be deeper. Horizontal hydraulic gradients in the glacial aquifer are generally to the east but may vary locally due to topography. Vertical hydraulic gradients are generally down in the glacial aquifer, and groundwater from the glacial aquifer generally recharges the underlying dolostone aquifer. Horizontal hydraulic conductivity of the glacial deposits can range from 10^{-2} centimeters per second (cm/sec) in outwash deposits (sand and gravel) to 10^{-6} cm/sec in till deposits (clay and silt). Vertical hydraulic conductivity is generally an order of magnitude less than horizontal conductivity of the same material.

3.4 Climate

The regional climate is modified somewhat by Lake Michigan. The effects of the lake are most prominent in the spring and early summer, when prevailing northeasterly winds are off the lake. Prevailing winds are from the south during mid-summer. During the remainder of the year the prevailing winds are predominantly from the west. An updated wind rose (Figure 7) was created using information from the Wisconsin Surface Weather Observation Stations (WI_ASOS) network for Station SBM (Iowa State University of Science and Technology, 2025).

Winters are long, cold, and snowy. Summer is warm, with several periods which are hot and humid. The average yearly temperature is 47°F and the average yearly amount of precipitation is

36 inches (Figure 8) (Climate Data, 2025). The month with the lowest amount of rainfall is February, recording a mere 1.9 inches on average, and the greatest amount of precipitation occurs in April, with an average of 4.0 inches. Thirty-year average precipitation, average snowfall, and local weather records for the nearest National Oceanic and Atmospheric Administration station (Port Washington, WI) (Figure 9) are available in Appendix B. (NOAA, 2025). According to the Climate and Economic Justice Screening Tool, the Port of Washington is not susceptible to climate change impacts (Table 3-1) (Climate and Economic Justice Screening Tool, 2025).

Table 3-1
Climate Change Impacts

Theme	Description	Rating
Expected agriculture loss rate	Economic loss to agricultural value resulting from natural hazards each year	32 nd not above 90 th percentile
Expected building loss rate	Economic loss to building value resulting from natural hazards each year	56 th not above 90 th percentile
Expected population loss rate	Fatalities and injuries resulting from natural hazards each year	53 rd not above 90 th percentile
Projected flood risk	Projected risk to properties from projected floods, from tides, rain, riverine and storm surges within 30 years	41 st not above 90 th percentile
Projected wildfire risk	Projected risk to properties from wildfire from fire fuels, weather, humans, and fire movement in 30 years	33 rd not above 90 th percentile

Prepared by: ALM1
Checked by: MMT

3.5 Aquatic/Terrestrial Resources – NR 670.014(2)(x)2.c.2)

The TSDF is located in the Sauk and Sucker Creek Watershed. As described in Section 3.3, there is an open water area on the northern portion of the property. The closest waterway is approximately 0.2 mile west of the property (WBIC 49600). This is an unnamed tributary that eventually drains to Sauk Creek. Although no changes are proposed, an updated WWI map is provided on Figure 3 (WDNR, 2025a).

A Hydric Soil Indicators Map is provided in Appendix C. The site is primarily comprised of well drained Kewaunee soils, with inclusions of somewhat poorly drained Manawa soils and poorly drained Poygan soils (NRCS, 2025).

3.6 Threatened and Endangered Species – NR 670.014(2)(x)2.c.2)

At the time of the FPOR renewal, no changes are proposed for the property. Therefore, this renewal is not anticipated to have primary or indirect adverse or beneficial biological impacts to

habitat, alteration of the physical environment, nor impacts to endangered or threatened species (NR 670.014(2)(x)2.d.2).

The project area was assessed for impacts to federally listed species using the U.S. Fish & Wildlife Service Information for Planning and Consultation (IPaC) tool. An official species list was requested for the site on February 22, 2025. Species listed included: the endangered Hine's Emerald Dragonfly (*Somatochlora hineana*), Eastern Prairie Fringed Orchid (*Platanthera leucophaea*), and the candidate Monarch Butterfly (*Danaus Plexippus*). A consistency letter using the Minnesota-Wisconsin Endangered Species Determination Key was generated on February 22, 2025, with a 'no effect' determination. The determinations are available for review in Appendix D. Additionally, a state endangered resources review was completed by the WDNR (Appendix E). This review confirmed that this project is covered under the Broad Incidental Take Permit/Authorization for No/Low Impact Activities. Therefore, continued operations at the site will not impact state listed threatened and/or endangered resources.

3.7 Special Resources – NR 670.014(2)(x)2.c.5)

VESTS does not anticipate any probable adverse or beneficial impacts on special resources, such as archeological, historical, state natural areas, or prime agricultural lands as a result of the continued operation of the TSDF (NR 670.014(2)(x)2.d.5). The WDNR Surface Water Data Viewer does not list any Areas of Special Natural Resources Interest within or adjacent to the project area.

3.8 Social and Economic Conditions – NR 670.014(2)(x)2.c.4)

This site is located in Tract Number 55089630100 in Ozaukee County. According to the Council of Environmental Quality (CEQ Guidelines, 1997), minority populations that comprise more than 50 percent of the affected population or represent a significantly higher percentage (typically 20 percent or higher) of a population in a reference geographical area, such as a county or state, require special consideration when assessing impacts.

Information was gathered using 2023 U.S. Census Bureau Population Estimates Program data for Port Washington, WI which includes the project area and extends south and to the west, shown in Table 3-2, Table 3-3, and Table 3-4 (USCB, 2025). This area is not considered a disadvantaged area (Climate and Economic Justice Screening Tool, 2025). Table 3-5 provides a summary of Port Washington data in comparison to thresholds for determining marginalized by underinvestment and overburdened pollutions.

It is noted that the EJ website provided in the WDNR call-in letter was not functional during the preparation of this EA. For this reason, the Climate and Economic Justice Screening Tool was used to address EJ concerns. It is noted that this screening tool does not provide the specific one-mile and three-mile radius review that is typical for EJ screenings. To help compare local and community impacts, U.S. Census Data for Port Washington, Ozaukee County, and the state of Wisconsin was reviewed. This comparison demonstrated that the Port Washington area is not an EJ community and is a similar representation compared to Ozaukee County and Wisconsin.

Table 3-2
Port Washington, WI: Population

Race	Port Washington	Ozaukee County	Wisconsin
Total	12,763	93,460	5,910,955
White Alone	91.4%	93.2%	86.4%
Black or African American alone	1.5%	2.0%	6.6%
American Indian and Alaska Native alone	0.1%	0.3%	1.2%
Asian alone	1.1%	2.7%	3.3%
Native Hawaiian and Other Pacific Islander alone	0%	0%	0.1%
Hispanic or Latino	2.5%	3.9%	8.1%
Two or more races	4.6%	1.6%	2.3%
Population / Age	Port Washington	Ozaukee County	Wisconsin
Under 5	5.6%	4.9%	5.3%
Under 18	22.3%	20.7%	21.1%
65 and Over	17.6%	22.3%	19.1%

Prepared by: ALM1
Checked by: MMT

Table 3-3
Port Washington, WI: Income and Poverty

Household Income/Assistance	Port Washington	Ozaukee County	Wisconsin
Median Income for all households in the past 12 months (in 2023 inflation adjusted \$)	\$81,582	\$96,734	\$75,670
Per capita Income in the past 12 months (in 2023 dollars), 2019-2023	\$42,950	\$57,651	\$42,019
Persons in poverty, percent	6.9%	4.8%	10.7%

Prepared by: ALM1
Checked by: MMT

Table 3-4
Port Washington, WI: Disability

Total	Port Washington	Ozaukee County	Wisconsin
With a disability, under age 65 years, percent, 2019-2023	8.8%	6.4%	8.5%
Persons without health insurance, under age 65 years, percent	1.2%	4.1%	5.9%

Prepared by: ALM1
Checked by: MMT

**Table 3-5
Port Washington, WI: Climate Change Impacts**

Theme	Description	Rating
Health		
Asthma	Share of people who have been told they have asthma	43 rd not above 90 th percentile
Diabetes	Share of people ages 18 years and older who have diabetes other than diabetes during pregnancy	12 th not above 90 th percentile
Heart disease	Share of people ages 18 years and older who have been told they have heart disease	37 th not above 90 th percentile
Low life expectancy	Average number of years a person can expect to live	52 nd not above 90 th percentile
Energy		
Energy cost	Average annual energy costs divided by household income	41 st not above 90 th percentile
PM _{2.5} in the air	Level of inhalable particles, 2.5 micrometers or smaller	23 rd not above 90 th percentile
Transportation		
Diesel particulate matter exposure	Amount of diesel exhaust in the air	44 th not above 90 th percentile
Transportation barriers	Average of relative cost and time spent on transportation	41 st not above 90 th percentile
Traffic proximity and volume	Count of vehicles at major roads within 500 meters	56 th not above 90 th percentile

Prepared by: ALM1
Checked by: MMT

4. Environmental Consequences – NR 670.014(2)(x)2.d.

At the time of the FPOR renewal, no changes to the facility are proposed. As such, no update for the following sections of the EA were provided as part of this appendix:

- ◆ Physical Impact
- ◆ Biological Impacts
- ◆ Land Impacts
- ◆ Social and Economic Impacts
- ◆ Special Resource Impacts
- ◆ Potential Impacts on the Human Environment

5. Project Alternatives – NR-670.014(2)(x)2.e.

At the time of the FPOR renewal, no changes or projects are proposed thus project alternatives are not applicable. Due to this, no update for this section of the EA was provided as part of this appendix.

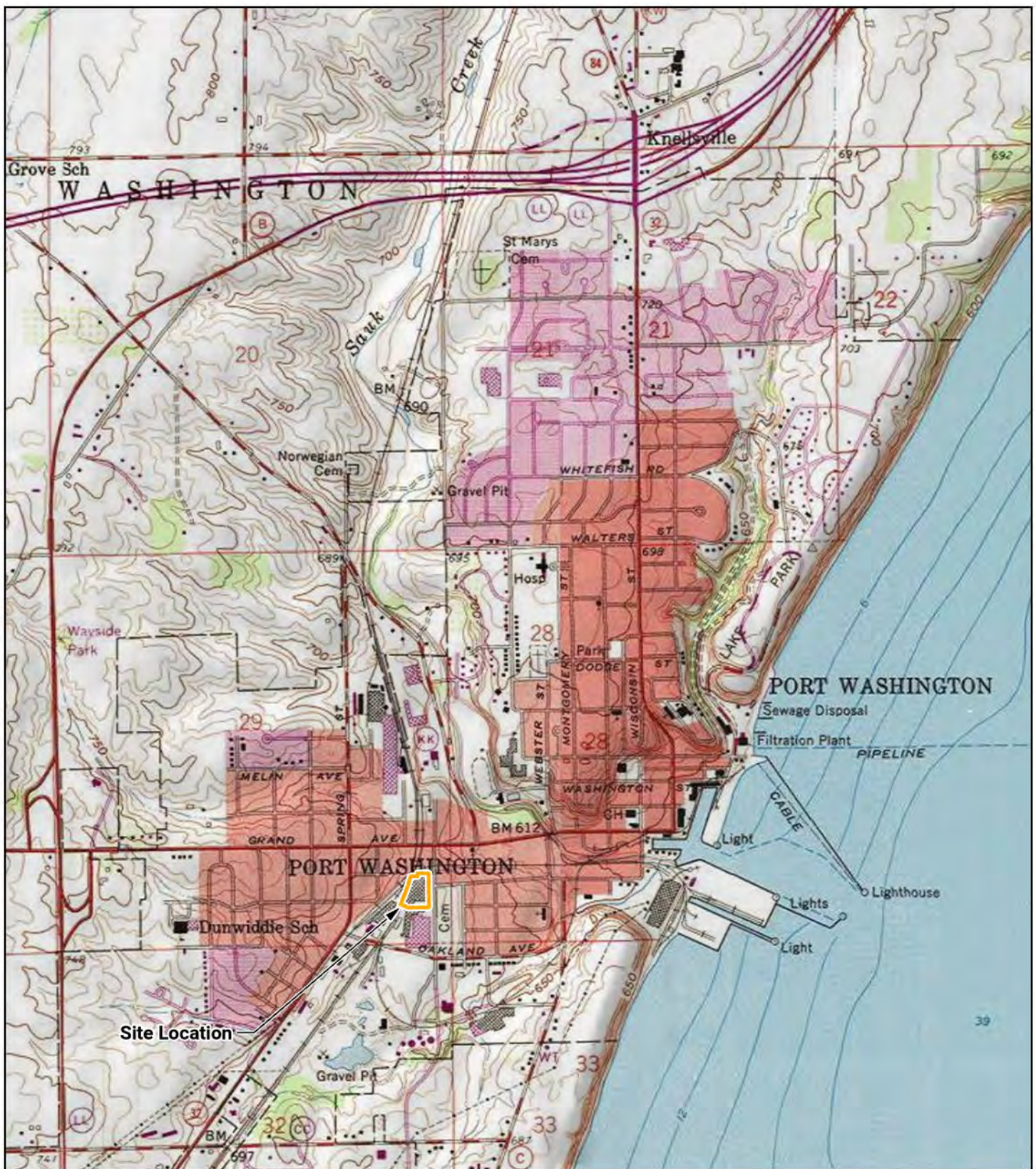
6. Effects of Project

At the time of the FPOR renewal, no changes or projects are proposed. Due to this, there is no update to the effects from the facility.

7. References

- Climate Data, 2025. Port Washington climate. <https://en.climate-data.org/north-america/united-states-of-america/wisconsin/port-washington-17732/#climate-graph>. Accessed February 15, 2025.
- Climate and Economic Justice Screening Tool, 2025. Climate and Economic Justice Screening Tool. <https://edgi-govdata-archiving.github.io/j40-cejst-2/en/#13.3/43.38886/-87.87221><https://edgi-govdata-archiving.github.io/j40-cejst-2/en/#13.3/43.38886/-87.87221>. Accessed February 20, 2025.
- Council on Environmental Quality Guidelines, 1997. <https://ceq.doe.gov/docs/ceq-regulations-and-guidance/regs/ej/justice.pdf>.
- Iowa State University of Science and Technology, 2025. Iowa Environmental Mesonet. https://mesonet.agron.iastate.edu/sites/windrose.phtml?station=SBM&network=Wl_ASOS. Accessed February 18, 2025.
- Natural Resources Conservation Service, 2025. Web Soil Survey. <https://websoilsurvey.nrcs.usda.gov/app/>. Accessed February 18, 2025.
- National Oceanic and Atmospheric Administration, 2025. U.S. climate normals quick access. <https://www.ncei.noaa.gov/access/us-climate-normals/#dataset=normals-monthly&timeframe=30&station=USC00476764>. Accessed February 20, 2025.
- United States Census Bureau QuickFacts, 2025. U.S. Census Bureau QuickFacts: Wisconsin; Ozaukee County, Wisconsin; Port Washington city, Wisconsin. Census Bureau QuickFacts. https://www.census.gov/quickfacts/fact/table/Wl_ozaukeecountywisconsin,portwashingtoncitywisconsin#. Accessed February 18, 2025.
- Wisconsin Department of Natural Resources, 2025a. Surface Water Data Viewer. <https://dnr.wisconsin.gov/topic/SurfaceWater/swdv>. Accessed February 14, 2025.
- Wisconsin Department of Natural Resources, 2025b. Wisconsin Well Viewer. <https://dnr.wisconsin.gov/topic/Groundwater/Data.html>. Accessed February 18, 2025.

Figures

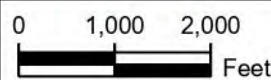


NOTES:

1. Basemap courtesy of esri.com, courtesy of the National Geographic Society and i-cubed.

LEGEND

Site Boundary



This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.

VEOLIA NORTH AMERICA

FIGURE 1 SITE LOCATION MAP FEASIBILITY AND PLAN OF OPERATION REPORT 1275 MINERAL SPRINGS DR, PORT WASHINGTON, WI

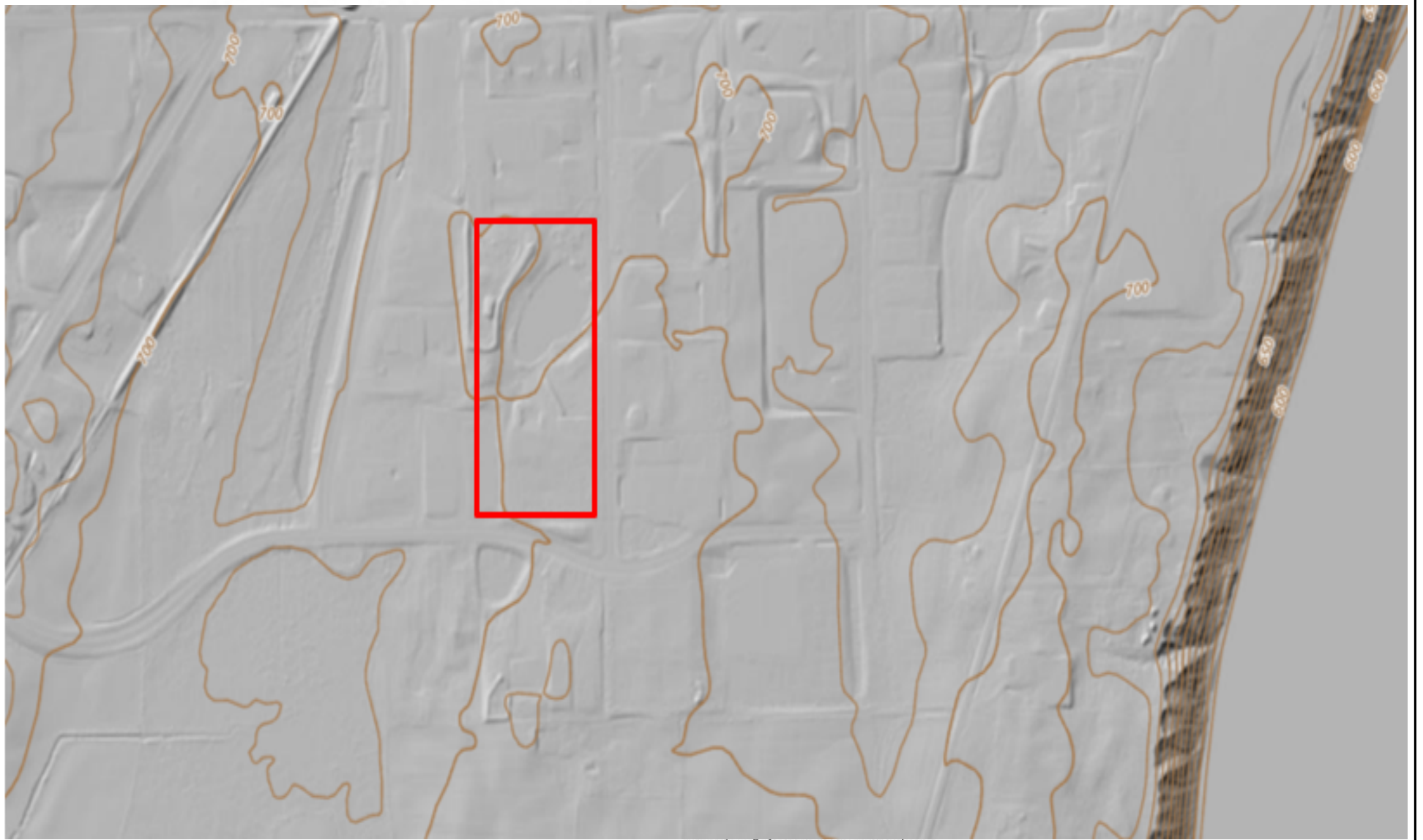
Date: FEB. 2025

Revision Date:

Drawn By: ACS1

Checked By: KMC2

Project: 24V007.00



NOTES:

1. Red outline represents the site boundaries.



Veolia North America

FIGURE 2

CONTOUR MAP

FEASIBILITY AND PLAN OF OPERATION REPORT
1275 MINERAL SPRINGS DR, PORT WASHINGTON, WI

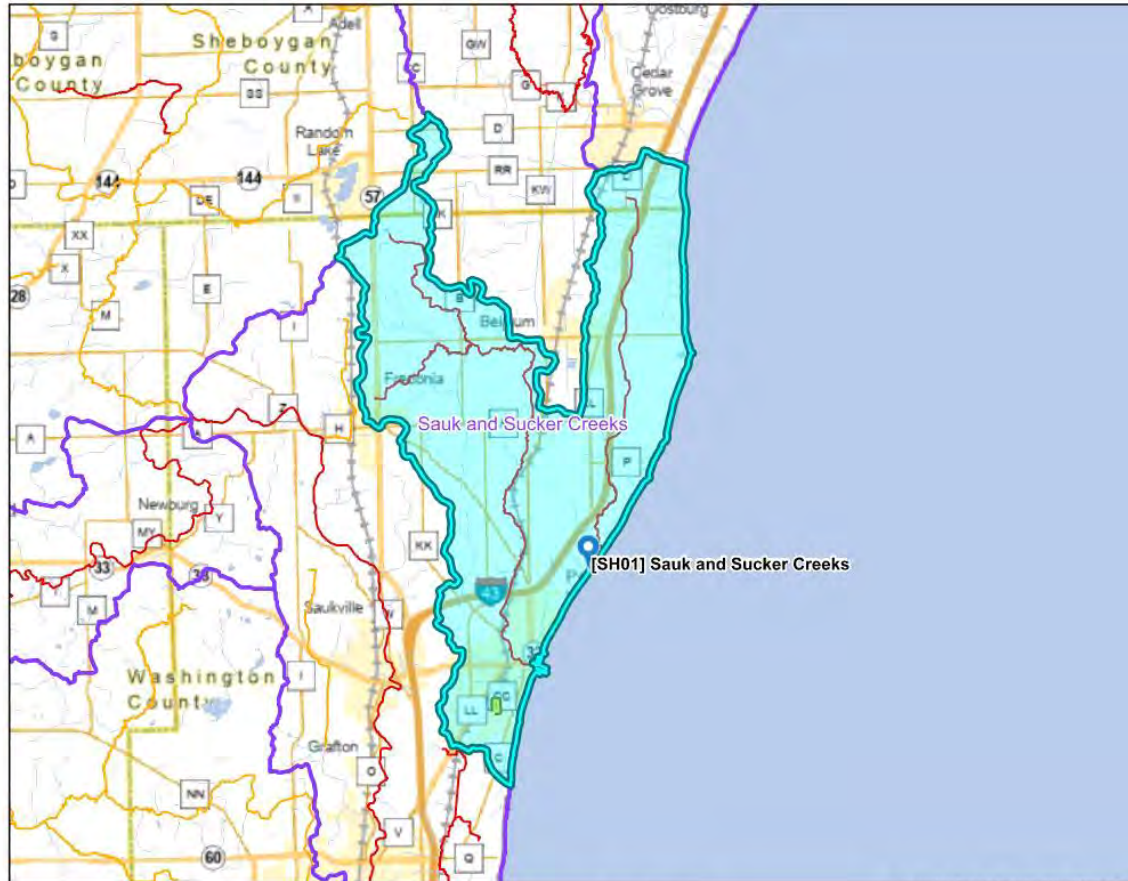
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Revision Date:

Drawn By: KMC2

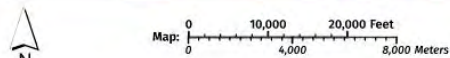
Checked By: ALM1

Project: 24V007.00



- Legend:** (some map layers may not be displayed)
- Watersheds
 - IWL - River Stream Beach Shore
 - WURL - River Stream Beach Shore
 - 24K Lakes and Open Water
 - 24K Streams and Rivers
 - City or Village
 - County Boundaries
 - Major Roads**
 - Interstate Highway
 - State Highway
 - County and Local Roads**
 - County HWY
 - Local Road
 - Railroads

Notes:



This map is a product generated by a DNR web mapping application.
This map is for informational purposes only and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. The user is solely responsible for verifying the accuracy of information before using for any purpose. By using this product for any purpose user agrees to be bound by all disclaimers found here: <https://dnr.wisconsin.gov/legal>

Service Layer Credits:
EN Basic Basemap WTM Ext:

Map projection: NAD 1983 HARN Wisconsin TM

Date Printed: 2/7/2025 12:52 PM



NOTES:

1. Blue outline represents the watershed.

Veolia North America

FIGURE 3

WATERSHED MAP

FEASIBILITY AND PLAN OF OPERATION REPORT
1275 MINERAL SPRINGS DR, PORT WASHINGTON, WI

Date: FEB 2025

Revision Date:

Drawn By: KMC2

Checked By: ALM1

Project: 24V007.00



National Flood Hazard Layer FIRMette



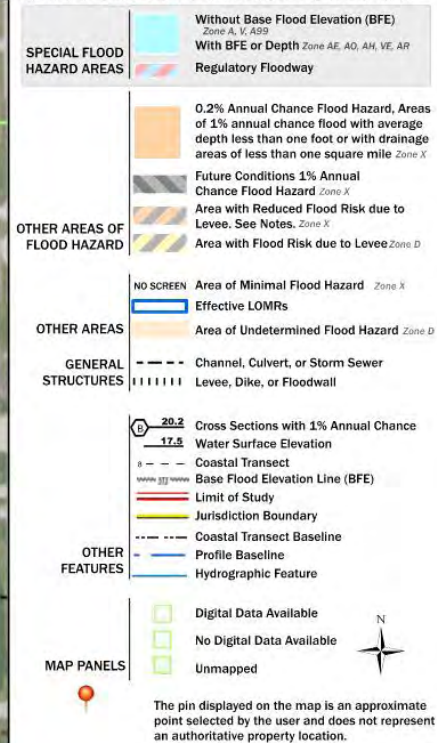
87°53'36"W 43°22'33"N



Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT



This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards.

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/18/2025 at 9:46 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

NOTES:

1. Red outline represents the site boundaries.

Veolia North America

FIGURE 4

100 YEAR FLOODPLAIN MAP

FEASIBILITY AND PLAN OF OPERATION REPORT
1275 MINERAL SPRINGS DR, PORT WASHINGTON, WI

Date: FEB 2025

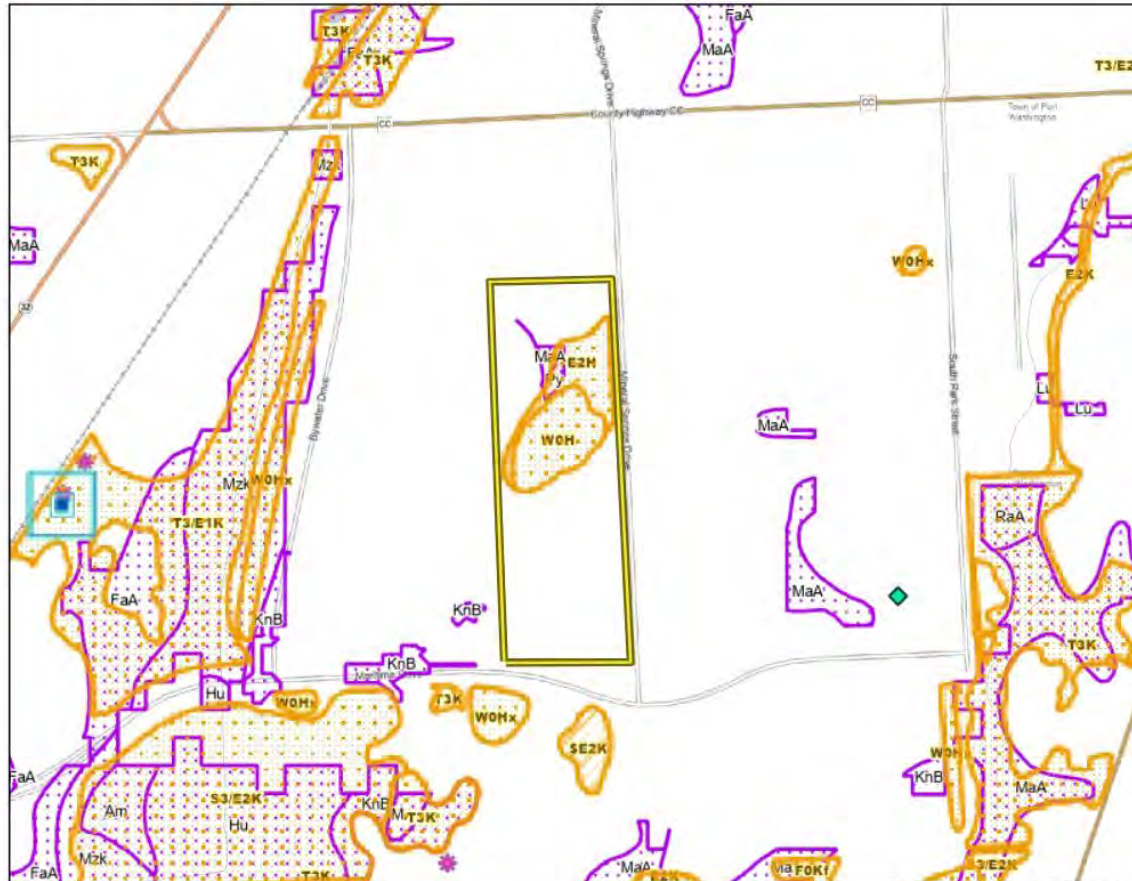
Revision Date:

Drawn By: KMC2

Checked By: ALM1

Project: 24V007.00





Legend: (some map layers may not be displayed)

Wetland Identifications and Confirmations

Wetland Class Points

Excavated pond

Wetland Class Areas

Filled Areas

Y

USDA Wetspots

Wetland Indicators

24K Lakes and Open Water

24K Streams and Rivers

24K Intermittent Streams

City or Village

County Boundaries

Major Roads

State Highway

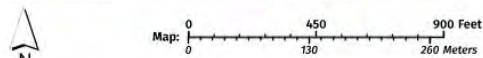
County and Local Roads

County HWY

Local Road

Railroads

Notes:



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This map is for informational purposes only and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. The user is solely responsible for verifying the accuracy of information before using for any purpose. By using this product for any purpose user agrees to be bound by all disclaimers found here: <https://dnr.wisconsin.gov/legal>

Service Layer Credits:
Wisconsin Wetland Inventory NWI (cached); Wetland Indicators & Soils: Surface Water Data Viewer Team,
EN Basic Basemap WTM Ext.; Wisconsin Wetland Inventory NWI (Dynamic): Calvin Lawrence, Dennis Weise,
Nina Riha

Map projection: NAD 1983 HARN Wisconsin TM

Date Printed: 2/11/2025 12:45 PM

NOTES:

1. Yellow outline represents the site boundaries.

Veolia North America

FIGURE 5

WISCONSIN WETLAND INVENTORY

FEASIBILITY AND PLAN OF OPERATION REPORT
1275 MINERAL SPRINGS DR, PORT WASHINGTON, WI

Date: FEB 2025

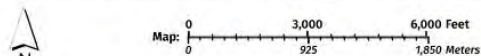
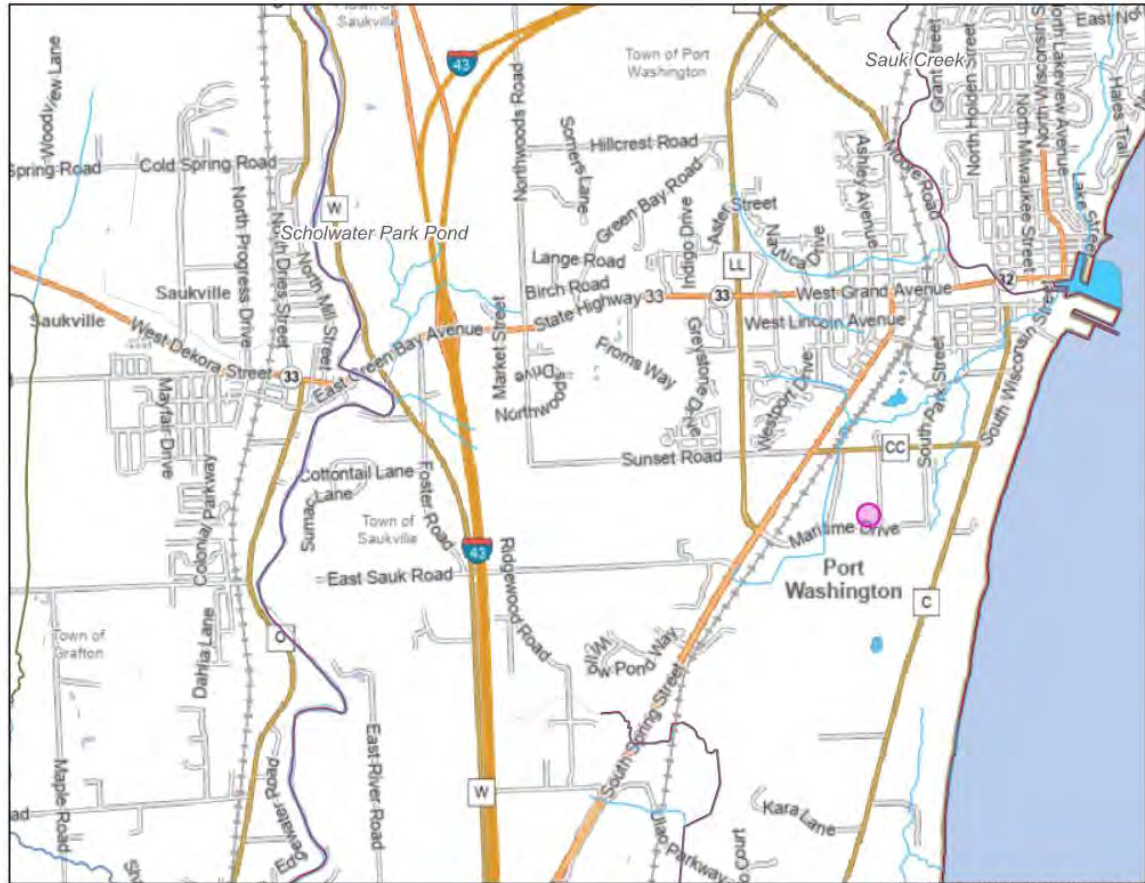
Revision Date:

Drawn By: KMC2

Checked By: ALM1

Project: 24V007.00





Service Layer Credits:
EN Basic Basemap WTM Ext : Clean Water Act Standards & Uses WI Dept. of Natural Resources, Water Quality

Map projection: NAD 1983 HARN Wisconsin TM

This map is a product generated by a DNR web mapping application.

This map is for informational purposes only and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. The user is solely responsible for verifying the accuracy of information before using for any purpose. By using this product for any purpose user agrees to be bound by all disclaimers found here: <https://dnr.wisconsin.gov/legal>

Date Printed: 2/18/2025 5:33 PM

NOTES:

1. Pink circle represents the site location.

Veolia North America

FIGURE 6

WATER QUALITY MAP

FEASIBILITY AND PLAN OF OPERATION REPORT
1275 MINERAL SPRINGS DR, PORT WASHINGTON, WI

Date: FEB 2025

Revision Date:

Drawn By: KMC2

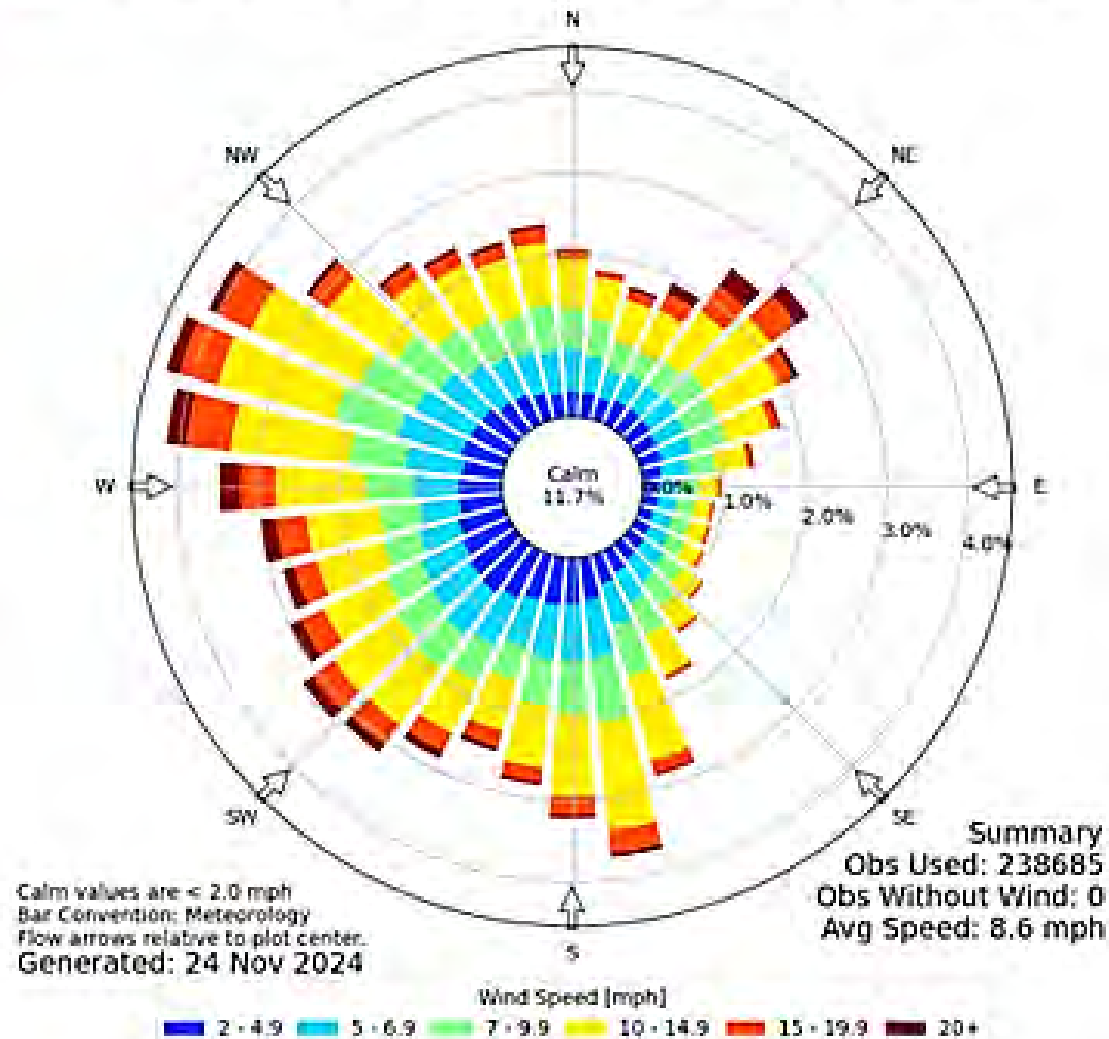
Checked By: ALM1

Project: 24V007.00





Windrose Plot for [SBM] SHEBOYGAN
Obs Between: 31 Aug 1996 07:53 PM - 24 Nov 2024 02:53 AM America/Chicago



NOTES:

1. The wind rose was created using information from the WI_ASOS network for Station SBM (Iowa State University of Science and Technology, 2025).



Veolia North America

FIGURE 7

WIND ROSE

FEASIBILITY AND PLAN OF OPERATION REPORT
1275 MINERAL SPRINGS DR, PORT WASHINGTON, WI

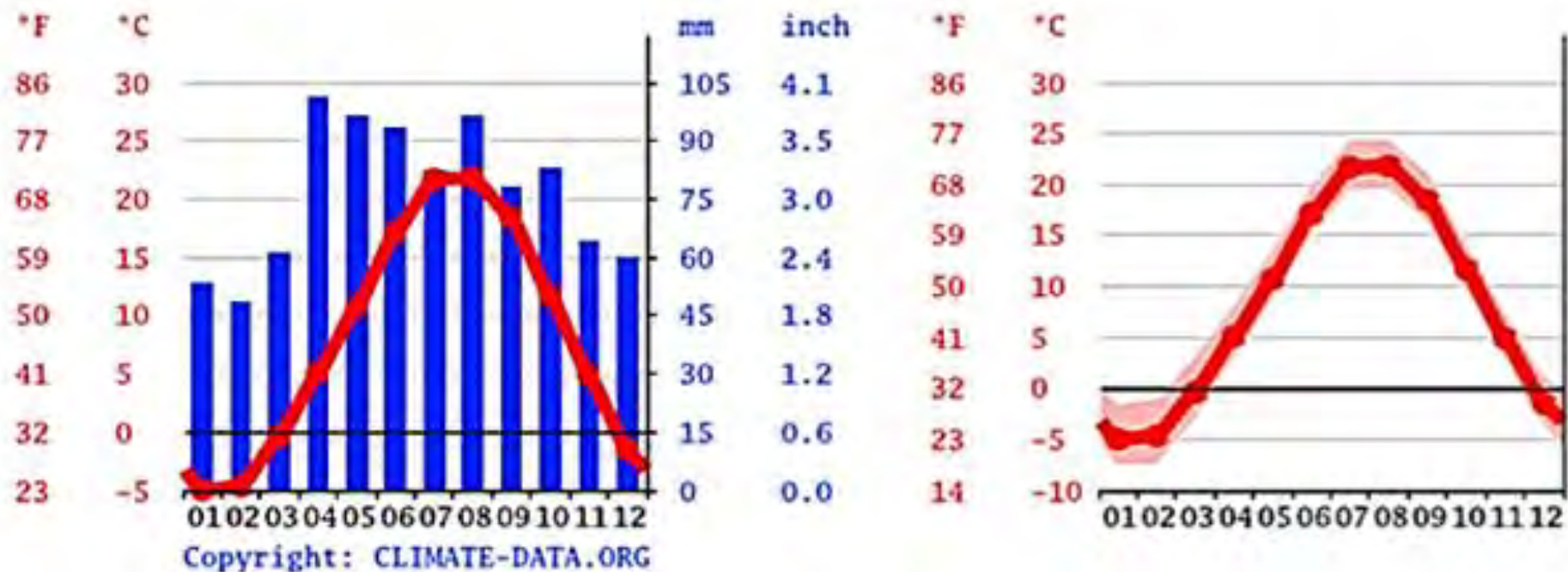
Date: FEB 2025

Revision Date:

Drawn By: KMC2

Checked By: ALM1

Project: 24V007.00



Veolia North America

FIGURE 8

AVERAGE YEARLY TEMPERATURE & PRECIPITATION
 FEASIBILITY AND PLAN OF OPERATION REPORT
 1275 MINERAL SPRINGS DR, PORT WASHINGTON, WI

Date: FEB 2025

Revision Date:

Drawn By: KMC2

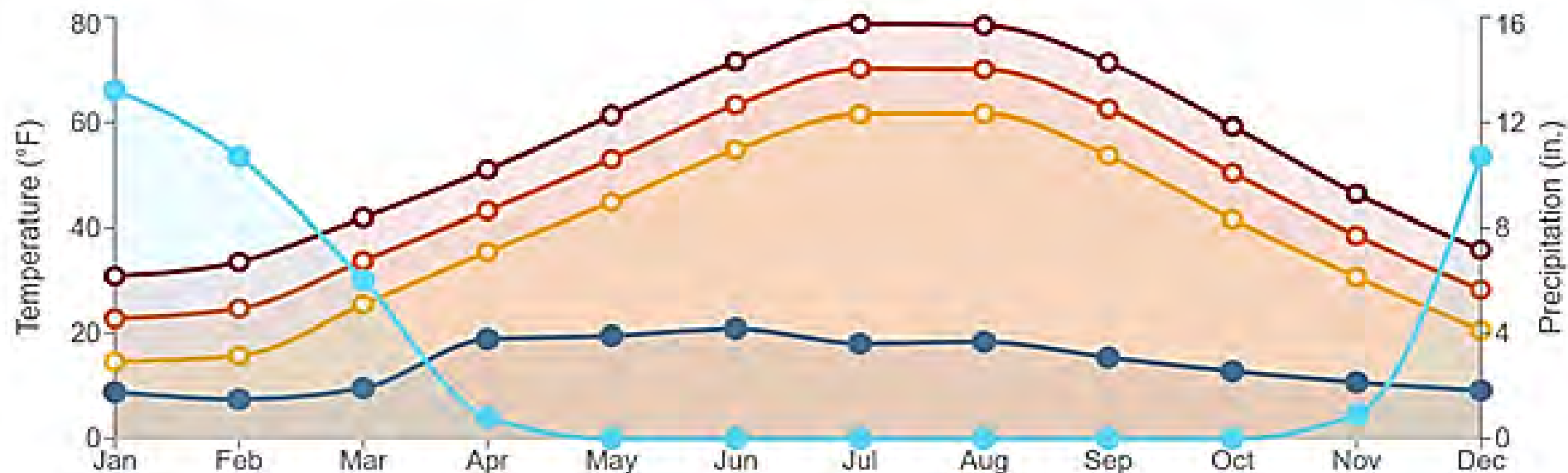
Checked By: ALM1

Project: 24V007.00



PORT WASHINGTON, WI

Get this data as [.csv](#) | [.pdf](#)
Station info: [USC00476764](#)



NOTES:

1. Data is from the National Oceanic and Atmospheric Administration (NOAA) weather station in Port Washington, WI.



Veolia North America

FIGURE 9

NOAA 30-YEAR AVERAGE

FEASIBILITY AND PLAN OF OPERATION REPORT
1275 MINERAL SPRINGS DR, PORT WASHINGTON, WI

Date: FEB 2025

Revision Date:

Drawn By: KMC2

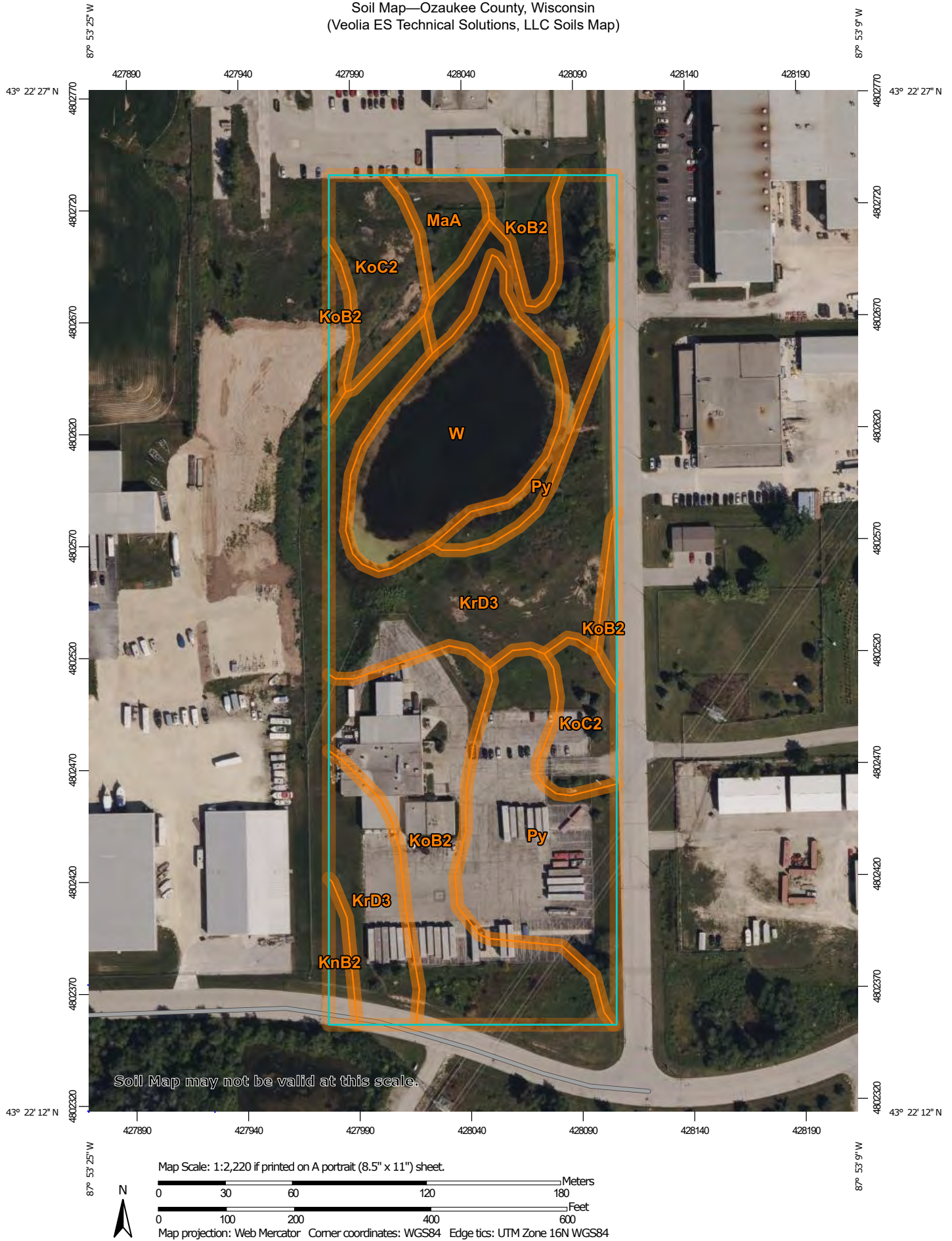
Checked By: ALM1

Project: 24V007.00

Appendix A


NRCS Soils Map

Soil Map—Ozaukee County, Wisconsin
(Veolia ES Technical Solutions, LLC Soils Map)




MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ozaukee County, Wisconsin

Survey Area Data: Version 21, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 4, 2022—Sep 13, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
KnB2	Kewaunee silt loam, 2 to 6 percent slopes, eroded	0.1	1.2%
KoB2	Kewaunee silty clay loam, 2 to 6 percent slopes, eroded	2.7	22.2%
KoC2	Kewaunee silty clay loam, 6 to 12 percent slopes, eroded	1.2	9.6%
KrD3	Kewaunee silty clay, 12 to 20 percent slopes, severely eroded	3.1	25.8%
MaA	Manawa silt loam, 0 to 3 percent slopes	0.3	2.8%
Py	Poygan silty clay loam, 0 to 2 percent slopes, occasionally ponded, drained	2.9	23.6%
W	Water	1.8	14.9%
Totals for Area of Interest		12.1	100.0%

Appendix B

Climatic Data

Summary of Monthly Normals
1991-2020

Generated on 02/17/2025

Current Location: Elev: 594 ft. Lat: 43.3944° N Lon: 87.8636° W
Station: **PORT WASHINGTON, WI US USC00476764**

Temperature (°F)																						
Mean							Cooling Degree Days						Heating Degree Days				Mean Number of Days					
							Base (above)						Base (above)									
Month	Daily Max	Daily Min	Mean	Long Term Max Std Dev	Long Term Min Std Dev	Long Term Avg Std Dev	55	57	60	65	70	72	55	57	60	65	Max >= 100	Max >= 90	Max >= 50	Max <= 32	Min <= 32	Min <= 0
01	30.8	14.6	22.7	4.6	5.6	5.0	0.0	0.0	0.0	0.0	0.0	0.0	1001.2	1063.1	1156.1	1311.2	0.0	0.0	0.8	18.8	28.6	4.7
02	33.5	15.7	24.6	4.8	6.1	5.4	0.0	0.0	0.0	0.0	0.0	0.0	851.1	907.1	991.1	1131.1	0.0	0.0	0.8	12.4	25.7	2.8
03	41.9	25.4	33.7	4.0	3.7	3.8	1.1	0.5	0.3	0.0	0.0	0.0	663.0	724.4	817.2	971.9	0.0	0.0	5.2	4.9	23.6	0.4
04	51.0	35.4	43.2	3.4	2.8	2.9	9.4	5.9	2.3	0.1	0.0	0.0	363.4	419.9	506.3	654.0	0.0	0.0	14.9	0.2	8.1	0.0
05	61.3	44.8	53.0	2.5	2.5	2.4	62.6	42.9	22.8	5.9	0.9	0.3	122.9	165.3	238.3	376.4	0.0	0.1	27.4	0.0	0.3	0.0
06	71.5	54.8	63.2	2.9	1.9	2.3	257.2	207.0	141.1	61.3	19.4	11.0	12.8	22.7	46.7	116.9	0.0	0.8	30.0	0.0	0.1	0.0
07	78.7	61.5	70.1	2.7	2.3	2.5	468.0	406.2	314.3	174.3	72.0	44.7	0.1	0.2	1.3	16.3	0.1	2.1	31.0	0.0	0.0	0.0
08	78.4	61.6	70.0	2.4	2.8	2.5	464.8	402.9	311.1	168.9	63.9	38.4	0.0	0.1	1.2	14.0	0.0	1.5	31.0	0.0	0.0	0.0
09	71.3	53.7	62.5	2.6	2.6	2.4	243.3	195.3	131.7	54.4	13.9	7.1	18.4	30.4	56.8	129.4	0.0	0.2	30.0	0.0	0.1	0.0
10	59.2	41.6	50.4	3.0	2.3	2.6	40.8	25.9	10.8	1.8	0.2	0.1	183.3	230.5	308.3	454.4	0.0	0.0	26.1	0.0	3.0	0.0
11	46.4	30.6	38.5	5.4	4.2	4.7	2.4	1.1	0.5	0.1	0.0	0.0	497.4	556.1	645.5	795.1	0.0	0.0	9.7	2.4	16.2	0.0
12	35.8	20.5	28.2	4.6	5.3	4.8	0.1	0.0	0.0	0.0	0.0	0.0	832.3	894.2	987.2	1142.2	0.0	0.0	1.6	12.2	26.8	1.6
Summary	55.0	38.4	46.7	3.6	3.5	3.4	1550	1288	935	467	170	102	4546	5014	5756	7113	0.1	4.7	208.5	50.9	132.5	9.5

Empty or blank cells indicate data is missing or insufficient occurrences to compute value

Current Location: Elev: 594 ft. Lat: 43.3944° N Lon: 87.8636° W
Station: **PORT WASHINGTON, WI US USC00476764**

Summary of Monthly Normals
1991-2020
Generated on 02/17/2025

Precipitation (in.)									
	Totals	Mean Number of Days				Precipitation Probabilities Probability that precipitation will be equal to or less than the indicated amount			
	Means	Daily Precipitation				Monthly Precipitation vs. Probability Levels			
Month	Mean	>= 0.01	>= 0.10	>= 0.50	>= 1.00	0.25	0.50	0.75	
01	1.76	8.1	4.6	1.0	0.2	0.99	1.73	2.39	
02	1.48	6.7	3.8	0.7	0.2	0.72	1.32	2.04	
03	1.91	7.7	4.9	1.2	0.4	0.66	1.54	3.00	
04	3.78	9.9	6.5	2.7	1.2	2.87	3.87	4.59	
05	3.90	11.1	7.3	2.6	0.8	2.64	3.78	4.68	
06	4.17	10.4	7.2	2.7	0.9	2.61	3.45	4.47	
07	3.61	8.7	5.9	2.5	1.1	2.57	3.44	4.34	
08	3.68	8.1	6.0	2.1	1.0	2.68	3.27	4.09	
09	3.08	7.8	5.4	2.3	0.8	1.78	2.78	3.85	
10	2.56	9.1	5.3	1.4	0.5	1.36	2.40	3.37	
11	2.13	7.6	4.7	1.5	0.4	1.16	1.81	2.69	
12	1.82	7.8	4.3	0.8	0.3	1.03	1.73	2.33	
Summary	33.88	103.0	65.9	21.5	7.8	21.07	31.12	41.84	

Empty or blank cells indicate data is missing or insufficient occurrences to compute value

Current Location: Elev: 594 ft. Lat: 43.3944° N Lon: 87.8636° W
Station: **PORT WASHINGTON, WI US USC00476764**

Summary of Monthly Normals
1991-2020
Generated on 02/17/2025

Snow (in.)													
	Totals	Mean Number of Days									Snow Probabilities Probability that snow will be equal to or less than the indicated amount		
	Means	Snowfall >= Thresholds					Snow Depth >= Thresholds				Monthly Snow vs. Probability Levels Values derived from the incomplete gamma distribution.		
Month	Snowfall Mean	0.01	1.0	3.0	5.00	10.00	1	3	5	10	.25	.50	.75
01	13.20	6.4	3.6	1.6	0.7	0.1	21.0	16.0	11.6	3.3	8.80	11.60	16.50
02	10.70	5.1	3.1	1.4	0.7	0.0	17.0	11.4	6.8	0.9	3.30	9.60	16.50
03	6.00	2.7	1.8	0.6	0.2	0.0	7.6	5.1	2.3	0.1	2.50	6.40	9.20
04	0.80	0.5	0.3	0.2	0.0	0.0	0.5	0.3	0.1	0.0	0.00	0.00	1.30
05	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00
06	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00
07	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00
08	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00
09	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00
10	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	0.00
11	0.90	0.9	0.4	0.1	0.0	0.0	1.3	0.4	0.1	0.0	0.00	0.20	1.20
12	10.70	4.6	2.6	1.3	0.6	0.1	10.9	6.6	3.3	1.4	1.60	4.60	10.30
Summary	42.3	20.2	11.8	5.2	2.2	0.2	58.3	39.8	24.2	5.7	16.2	32.4	55.0

Empty or blank cells indicate data is missing or insufficient occurrences to compute value

Current Location: Elev: 594 ft. Lat: 43.3944° N Lon: 87.8636° W
Station: **PORT WASHINGTON, WI US USC00476764**

Summary of Monthly Normals
1991-2020
Generated on 02/17/2025

Growing Degree Units (Monthly)												
Base	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Growing Degree Units (Monthly)												
Base	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
40	2.1	3.0	35.7	145.6	405.3	694.4	932.9	929.8	674.9	330.7	88.1	11.9
45	0.1	0.6	13.3	67.4	259.6	544.5	777.9	774.8	525.5	200.0	36.1	3.0
50	0.0	0.0	4.6	26.9	141.0	396.6	623.0	619.9	379.0	101.8	11.2	0.9
55	0.0	0.0	1.1	9.4	62.6	257.2	468.0	464.8	243.3	40.8	2.4	0.1
60	0.0	0.0	0.3	2.3	22.8	141.1	314.3	311.1	131.7	10.8	0.5	0.0
Growing Degree Units for Corn (Monthly)												
50/86	1.0	1.6	20.7	68.5	187.4	402.1	611.3	612.0	396.4	160.2	38.4	4.3

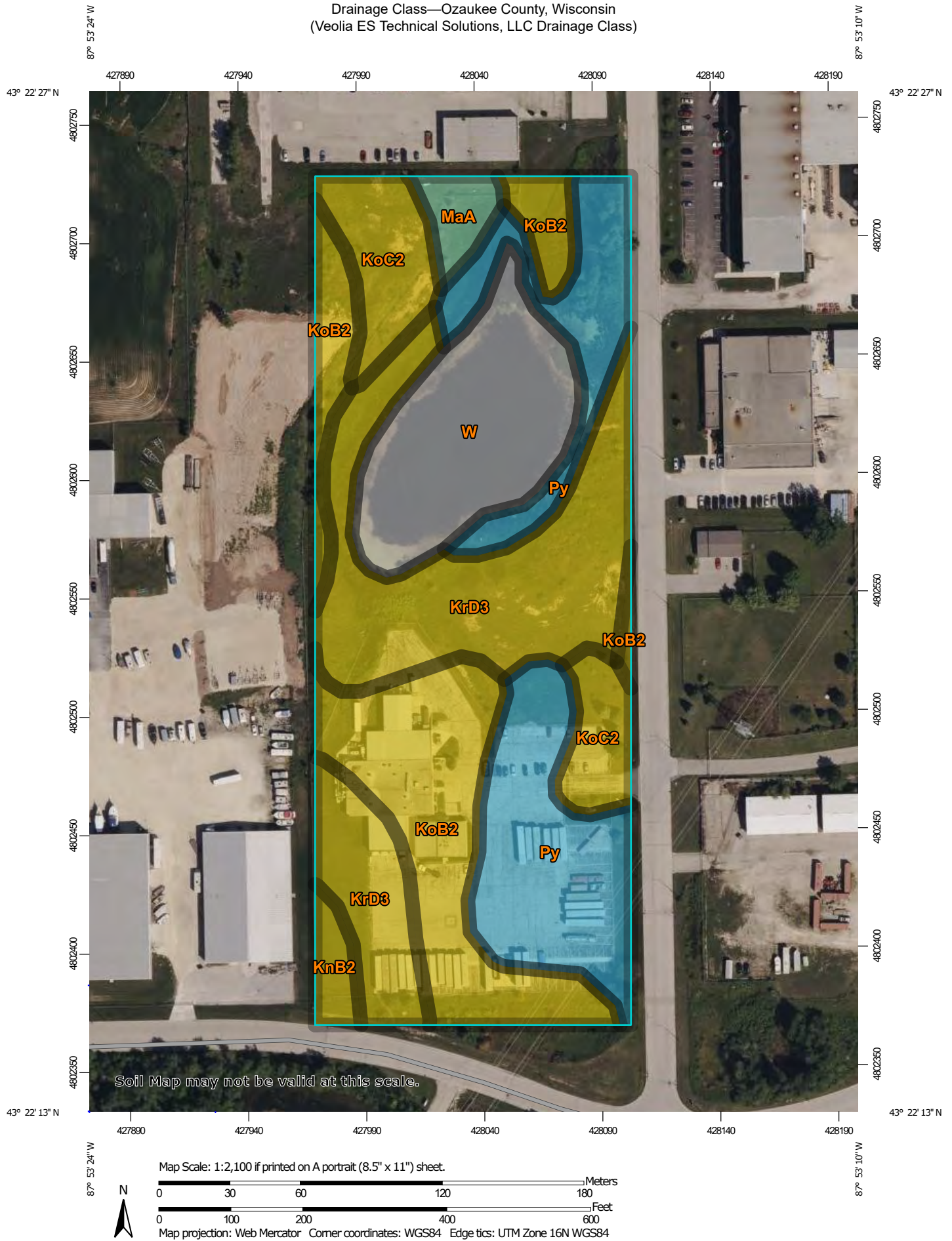
Growing Degree Units (Accumulated Monthly)												
40	2	5	41	186	592	1286	2219	3149	3824	4154	4243	4254
45	0	1	14	81	341	886	1663	2438	2964	3164	3200	3203
50	0	0	5	32	172	569	1192	1812	2191	2293	2304	2305
55	0	0	1	10	73	330	798	1263	1506	1547	1550	1550
60	0	0	0	3	25	166	481	792	924	934	935	935
Growing Degree Units for Corn (Monthly Accumulated)												
50/86	1	3	23	92	279	681	1293	1905	2301	2461	2500	2504

Note: For corn, temperatures below 50 are set to 50, and temperatures above 86 are set to 86.
Empty or blank cells indicate data is missing or insufficient occurrences to compute value.

Appendix C


Hydric Soils

Drainage Class—Ozaukee County, Wisconsin
(Veolia ES Technical Solutions, LLC Drainage Class)





















MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons


- | | | | |
|-----------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------|------------------------------|
|  | Excessively drained |  | Excessively drained |
|  | Somewhat excessively drained |  | Somewhat excessively drained |
|  | Well drained |  | Well drained |
|  | Moderately well drained |  | Moderately well drained |
|  | Somewhat poorly drained |  | Somewhat poorly drained |
|  | Poorly drained |  | Poorly drained |
|  | Very poorly drained |  | Very poorly drained |
|  | Subaqueous |  | Subaqueous |
|  | Not rated or not available |  | Not rated or not available |

Soil Rating Lines






- | | |
|-------------------------------------------------------------------------------------|------------------------------|
|  | Excessively drained |
|  | Somewhat excessively drained |
|  | Well drained |
|  | Moderately well drained |
|  | Somewhat poorly drained |
|  | Poorly drained |
|  | Very poorly drained |
|  | Subaqueous |
|  | Not rated or not available |

Soil Rating Points


Water Features

 Streams and Canals

Transportation

- | | |
|-----------------------------------------------------------------------------------|---------------------|
|  | Rails |
|  | Interstate Highways |
|  | US Routes |
|  | Major Roads |
|  | Local Roads |

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Ozaukee County, Wisconsin
Survey Area Data: Version 21, Sep 3, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 4, 2022—Sep 13, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Drainage Class

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
KnB2	Kewaunee silt loam, 2 to 6 percent slopes, eroded	Well drained	0.2	1.8%
KoB2	Kewaunee silty clay loam, 2 to 6 percent slopes, eroded	Well drained	2.6	22.1%
KoC2	Kewaunee silty clay loam, 6 to 12 percent slopes, eroded	Well drained	1.1	9.3%
KrD3	Kewaunee silty clay, 12 to 20 percent slopes, severely eroded	Well drained	3.2	26.9%
MaA	Manawa silt loam, 0 to 3 percent slopes	Somewhat poorly drained	0.3	2.3%
Py	Poygan silty clay loam, 0 to 2 percent slopes, occasionally ponded, drained	Poorly drained	2.7	22.5%
W	Water		1.8	15.2%
Totals for Area of Interest			11.9	100.0%

Description

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix D

Information for Planning and Consultation



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
Phone: (952) 858-0793



In Reply Refer To:
Project code: 2025-0059958
Project Name: VESTS TSDF

02/22/2025 09:52:27 UTC

Subject: Technical Assistance letter for 'VESTS TSDF' for specified threatened and endangered species that may occur in your proposed project location consistent with the Minnesota-Wisconsin Endangered Species Determination Key (Minnesota-Wisconsin DKey).

Dear Amanda Minks:

The U.S. Fish and Wildlife Service (Service) received on **February 22, 2025** your effect determination(s) for the 'VESTS TSDF' (Action) using the Minnesota-Wisconsin DKey within the Information for Planning and Consultation (IPaC) system. You have submitted this key to satisfy requirements under Section 7(a)(2). The Service developed this system in accordance of with the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C 1531 et seq.).

Based on your answers and the assistance of the Service's Minnesota-Wisconsin DKey, you made the following effect determination(s) for the proposed Action:

Species	Listing Status	Determination
Eastern Prairie Fringed Orchid (<i>Platanthera leucophaea</i>)	Threatened	No effect
Hine's Emerald Dragonfly (<i>Somatochlora hineana</i>)	Endangered	No effect
Monarch Butterfly (<i>Danaus plexippus</i>)	Proposed Threatened	No effect

Determination Information

Thank you for informing the Service of your "No Effect" determination(s). No further coordination is necessary for the species you determined will not be affected by the Action.

Additional Information

Sufficient project details: Please provide sufficient project details on your project homepage in IPaC (Define Project, Project Description) to support your conclusions. Failure to disclose important aspects of your project that would influence the outcome of your effects determinations may negate your determinations and invalidate this letter. If you have site-specific

information that leads you to believe a different determination is more appropriate for your project than what the Dkey concludes, you can and should proceed based on the best available information.

Future project changes: The Service recommends that you contact the Minnesota-Wisconsin Ecological Services Field Office or re-evaluate the project in IPaC if: 1) the scope or location of the proposed Action is changed; 2) new information reveals that the action may affect listed species or designated critical habitat in a manner or to an extent not previously considered; 3) the Action is modified in a manner that causes effects to listed species or designated critical habitat; or 4) a new species is listed or critical habitat designated. If any of the above conditions occurs, additional consultation with the Service should take place before project changes are final or resources committed.

For non-Federal representatives: Please note that when a project requires consultation under section 7 of the Act, the Service must consult directly with the Federal action agency unless that agency formally designates a non-Federal representative (50 CFR 402.08). Non-Federal representatives may prepare analyses or conduct informal consultations; however, the ultimate responsibility for section 7 compliance under the Act remains with the Federal agency. Please include the Federal action agency in additional correspondence regarding this project.

Species-specific information

Listed Plants: You have indicated that your Action has no effect (NE) on a threatened or endangered plant species, without a Federal nexus of any kind (i.e., the project is not on Federal land; no Federal funding, authorization, or permitting required; no Federal agency involvement in planning or implementation). Although your Endangered Species Act requirements are met, we recommend you contact the Minnesota or Wisconsin Department of Natural Resources regarding compliance with state law. **You may need a state permit if your Action will harm state listed plants. We encourage landowners to maintain habitat for listed plant species and avoid disturbing listed plants to the extent possible.**

Bald and Golden Eagles: Bald eagles, golden eagles, and their nests are protected under the Bald and Golden Eagle Protection Act (54 Stat. 250, as amended, 16 U.S.C. 668a-d) (Eagle Act). The Eagle Act prohibits, except when authorized by an Eagle Act permit, the “taking” of bald and golden eagles and defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb.” The Eagle Act’s implementing regulations define disturb as “... to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.”

Coordination with the Service is not complete if additional coordination is advised above for any species.

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

VESTS TSDF

2. Description

The following description was provided for the project 'VESTS TSDF':

TSDF permit renewal

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.372324500000005,-87.88834731009516,14z>



QUALIFICATION INTERVIEW

1. This determination key is intended to assist the user in evaluating the effects of their actions on Federally listed species in Minnesota and Wisconsin. It does not cover other prohibited activities under the Endangered Species Act (e.g., for wildlife: import/export, Interstate or foreign commerce, possession of illegally taken wildlife, etc.; for plants: import/export, reduce to possession, malicious destruction on Federal lands, commercial sale, etc.) or other statutes. Additionally, this key DOES NOT cover wind development, purposeful take (e.g., for research or surveys), communication towers that have guy wires or are over 450 feet in height, aerial or other large-scale application of any chemical (such as insecticide or herbicide), and approval of long-term permits or plans (e.g., FERC licenses, HCP's).

Click **YES** to acknowledge that you must consider other prohibitions of the ESA or other statutes outside of this determination key.

Yes

2. Is the action being funded, authorized, or carried out by a Federal agency?

No

3. Are you the Federal agency or designated non-federal representative?

No

4. Does the action involve the installation or operation of wind turbines?

No

5. Does the action involve purposeful take of a listed animal?

No

6. Does the action involve a new communications tower?

No

7. Does the activity involve aerial or other large-scale application of ANY chemical, including pesticides (insecticide, herbicide, fungicide, rodenticide, etc)?

No

8. Will your action permanently affect local hydrology?

No

9. Will your action temporarily affect local hydrology?

No

10. Will your project have any direct impacts to a stream or river (e.g., Horizontal Directional Drilling (HDD), hydrostatic testing, stream/road crossings, new stormwater outfall discharge, dams, other in-stream work, etc.)?

No

11. Does your project have the potential to impact the riparian zone or indirectly impact a stream/river (e.g., cut and fill; horizontal directional drilling; construction; vegetation removal; pesticide or fertilizer application; discharge; runoff of sediment or pollutants; increase in erosion, etc.)?

Note: Consider all potential effects of the action, including those that may happen later in time and outside and downstream of the immediate area involved in the action.

Endangered Species Act regulation defines "effects of the action" to include all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (50 CFR 402.02).

No

12. Will your action disturb the ground or existing vegetation?

Note: This includes any off-road vehicle access, soil compaction (enough to collapse a rodent burrow), digging, seismic survey, directional drilling, heavy equipment, grading, trenching, placement of fill, pesticide application (herbicide, fungicide), vegetation management (including removal or maintenance using equipment or prescribed fire), cultivation, development, etc.

No

13. Will your action include spraying insecticides?

No

14. Does your action area occur entirely within an already developed area?

Note: Already developed areas are already paved, covered by existing structures, manicured lawns, industrial sites, or cultivated cropland, AND do not contain trees that could be roosting habitat. Be aware that listed species may occur in areas with natural, or semi-natural, vegetation immediately adjacent to existing utilities (e.g. roadways, railways) or within utility rights-of-way such as overhead transmission line corridors, and can utilize suitable trees, bridges, or culverts for roosting even in urban dominated landscapes (so these are not considered "already developed areas" for the purposes of this question). If unsure, select NO..

Yes

15. Does the action have potential indirect effects to listed species or the habitats they depend on (e.g., water discharge into adjacent habitat or waterbody, changes in groundwater elevation, introduction of an exotic plant species)?

No

16. [Hidden Semantic] Does the action area intersect the monarch butterfly species list area?

Automatically answered

Yes

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Amanda Minks
Address: 5117 West Terrace Drive, Suite 401
City: Madison
State: WI
Zip: 53718
Email: amanda.minks@foth.com
Phone: 6086280585



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Minnesota-Wisconsin Ecological Services Field Office
3815 American Blvd East
Bloomington, MN 55425-1659
Phone: (952) 858-0793



In Reply Refer To:
Project Code: 2025-0059958
Project Name: VESTS TSDF

02/22/2025 09:43:02 UTC

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

This response has been generated by the Information, Planning, and Conservation (IPaC) system to provide information on natural resources that could be affected by your project. The U.S. Fish and Wildlife Service (Service) provides this response under the authority of the Endangered Species Act of 1973 (16 U.S.C. 1531-1543), the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d), the Migratory Bird Treaty Act (16 U.S.C. 703-712), and the Fish and Wildlife Coordination Act (16 U.S.C. 661 *et seq.*).

Threatened and Endangered Species

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and may be affected by your proposed project. The species list fulfills the requirement for obtaining a Technical Assistance Letter from the U.S. Fish and Wildlife Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

Consultation Technical Assistance

Please refer to our [Section 7 website](#) for guidance and technical assistance, including [step-by-step instructions](#) for making effects determinations for each species that might be present and for specific guidance on the following types of projects: projects in developed areas, HUD, CDBG, EDA, USDA Rural Development projects, pipelines, buried utilities, telecommunications, and requests for a Conditional Letter of Map Revision (CLOMR) from FEMA.

We recommend running the project (if it qualifies) through our **Minnesota-Wisconsin Federal Endangered Species Determination Key (Minnesota-Wisconsin ("D-key"))**. A [demonstration video](#) showing how-to access and use the determination key is available. Please note that the Minnesota-Wisconsin D-key is the third option of 3 available d-keys. D-keys are tools to help Federal agencies and other project proponents determine if their proposed action has the potential to adversely affect federally listed species and designated critical habitat. The Minnesota-Wisconsin D-key includes a structured set of questions that assists a project proponent in determining whether a proposed project qualifies for a certain predetermined consultation outcome for all federally listed species found in Minnesota and Wisconsin (except for the northern long-eared bat- see below), which includes determinations of "no effect" or "may affect, not likely to adversely affect." In each case, the Service has compiled and analyzed the best available information on the species' biology and the impacts of certain activities to support these determinations.

If your completed d-key output letter shows a "No Effect" (NE) determination for all listed species, print your IPaC output letter for your files to document your compliance with the Endangered Species Act.

For Federal projects with a "Not Likely to Adversely Affect" (NLAA) determination, our concurrence becomes valid if you do not hear otherwise from us after a 30-day review period, as indicated in your letter.

If your d-key output letter indicates additional coordination with the Minnesota-Wisconsin Ecological Services Field Office is necessary (i.e., you get a "May Affect" determination), you will be provided additional guidance on contacting the Service to continue ESA coordination outside of the key; ESA compliance cannot be concluded using the key for "May Affect" determinations unless otherwise indicated in your output letter.

Note: Once you obtain your official species list, you are not required to continue in IPaC with d-keys, although in most cases these tools should expedite your review. If you choose to make an effects determination on your own, you may do so. If the project is a Federal Action, you may want to review our section 7 step-by-step instructions before making your determinations.

Using the IPaC Official Species List to Make No Effect and May Affect Determinations for Listed Species

1. If IPaC returns a result of "There are no listed species found within the vicinity of the project," then project proponents can conclude the proposed activities will have **no effect** on any federally listed species under Service jurisdiction. Concurrence from the Service is not required for **no effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.
2. If IPaC returns one or more federally listed, proposed, or candidate species as potentially present in the action area of the proposed project – other than bats (see below) – then project proponents must determine if proposed activities will have **no effect** on or **may affect** those species. For assistance in determining if suitable habitat for listed, candidate, or proposed species occurs within your project area or if species may be affected by project activities, you can obtain [Life History Information for Listed and Candidate Species](#) on our office website. If no impacts will occur to a species on the IPaC species list (e.g., there is no habitat present in the project area), the appropriate determination is **no effect**. No further consultation or coordination is required. Attach this letter to the dated IPaC species list report for your records.

3. Should you determine that project activities **may affect** any federally listed, please contact our office for further coordination. Letters with requests for consultation or correspondence about your project should include the Consultation Tracking Number in the header. Electronic submission is preferred.

Northern Long-Eared Bats

Northern long-eared bats occur throughout Minnesota and Wisconsin and the information below may help in determining if your project may affect these species.

Suitable summer habitat for northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥ 3 inches dbh for northern long-eared bat that have exfoliating bark, cracks, crevices, and/or hollows), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat and evaluated for use by bats. If your project will impact caves or mines or will involve clearing forest or woodland habitat containing suitable roosting habitat, northern long-eared bats could be affected. For bat activity dates, please review Appendix L in the [Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines](#).

Examples of unsuitable habitat include:

- Individual trees that are greater than 1,000 feet from forested or wooded areas,
- Trees found in highly developed urban areas (e.g., street trees, downtown areas),
- A pure stand of less than 3-inch dbh trees that are not mixed with larger trees, and
- A monoculture stand of shrubby vegetation with no potential roost trees.

If IPaC returns a result that northern long-eared bats are potentially present in the action area of the proposed project, project proponents can conclude the proposed activities **may affect** this species **IF** one or more of the following activities are proposed:

- Clearing or disturbing suitable roosting habitat, as defined above, at any time of year,
- Any activity in or near the entrance to a cave or mine,
- Mining, deep excavation, or underground work within 0.25 miles of a cave or mine,
- Construction of one or more wind turbines, or
- Demolition or reconstruction of human-made structures that are known to be used by bats based on observations of roosting bats, bats emerging at dusk, or guano deposits or stains.

If none of the above activities are proposed, project proponents can conclude the proposed activities will have **no effect** on the northern long-eared bat. Concurrence from the Service is not required for **No Effect** determinations. No further consultation or coordination is required. Attach this letter to the dated IPaC

species list report for your records.

If any of the above activities are proposed, and the northern long-eared bat appears on the user's species list, the federal project user will be directed to either the northern long-eared bat and tricolored bat range-wide D-key or the Federal Highways Administration, Federal Railways Administration, and Federal Transit Administration Indiana bat/Northern long-eared bat D-key, depending on the type of project and federal agency involvement. Similar to the Minnesota-Wisconsin D-key, these d-keys help to determine if prohibited take might occur and, if not, will generate an automated verification letter. Additional information about available tools can be found on the Service's [northern long-eared bat website](#).

Whooping Crane

Whooping crane is designated as a non-essential experimental population in Wisconsin and consultation under Section 7(a)(2) of the Endangered Species Act is only required if project activities will occur within a National Wildlife Refuge or National Park. If project activities are proposed on lands outside of a National Wildlife Refuge or National Park, then you are not required to consult. For additional information on this designation and consultation requirements, please review "[Establishment of a Nonessential Experimental Population of Whooping Cranes in the Eastern United States](#)."

Other Trust Resources and Activities

Bald and Golden Eagles - Although the bald eagle has been removed from the endangered species list, this species and the golden eagle are protected by the Bald and Golden Eagle Act and the Migratory Bird Treaty Act. It is the responsibility of the project proponent to survey the area for any migratory bird nests. If there is an eagle nest on-site while work is on-going, eagles may be disturbed. We recommend avoiding and minimizing disturbance to eagles whenever practicable. If you cannot avoid eagle disturbance, you may seek a [permit](#). A [nest take permit](#) is always required for removal, relocation, or obstruction of an eagle nest. For communication and wind energy projects, please refer to additional guidelines below.

Migratory Birds - The Migratory Bird Treaty Act (MBTA) prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Service. The Service has the responsibility under the MBTA to proactively prevent the mortality of migratory birds whenever possible and we encourage implementation of [recommendations that minimize potential impacts to migratory birds](#). Such measures include clearing forested habitat outside the nesting season (generally March 1 to August 31) or conducting nest surveys prior to clearing to avoid injury to eggs or nestlings.

Communication Towers - Construction of new communications towers (including radio, television, cellular, and microwave) creates a potentially significant impact on migratory birds, especially some 350 species of night-migrating birds. However, the Service has developed [voluntary guidelines for minimizing impacts](#).

Transmission Lines - Migratory birds, especially large species with long wingspans, heavy bodies, and poor maneuverability can also collide with power lines. In addition, mortality can occur when birds, particularly hawks, eagles, kites, falcons, and owls, attempt to perch on uninsulated or unguarded power poles. To minimize these risks, please refer to [guidelines](#) developed by the Avian Power Line Interaction Committee and the Service. Implementation of these measures is especially important along sections of lines adjacent to wetlands or other areas that support large numbers of raptors and migratory birds.

Wind Energy - To minimize impacts to migratory birds and bats, wind energy projects should follow the Service's [Wind Energy Guidelines](#). In addition, please refer to the Service's [Eagle Conservation Plan Guidance](#), which provides guidance for conserving bald and golden eagles in the course of siting, constructing, and operating wind energy facilities.

State Department of Natural Resources Coordination

While it is not required for your Federal section 7 consultation, please note that additional state endangered or threatened species may also have the potential to be impacted. **Please contact the Minnesota or Wisconsin Department of Natural Resources for information on state listed species that may be present in your proposed project area.**

Minnesota

[Minnesota Department of Natural Resources - Endangered Resources Review Homepage](#)

Email: Review.NHIS@state.mn.us

Wisconsin

[Wisconsin Department of Natural Resources - Endangered Resources Review Homepage](#)

Email: DNRERReview@wi.gov

We appreciate your concern for threatened and endangered species. Please feel free to contact our office with questions or for additional information.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Minnesota-Wisconsin Ecological Services Field Office

3815 American Blvd East

Bloomington, MN 55425-1659

(952) 858-0793

PROJECT SUMMARY

Project Code: 2025-0059958
Project Name: VESTS TSDF
Project Type: Special Use Permit - Research
Project Description: TSDF permit renewal
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.372324500000005,-87.88834731009516,14z>



Counties: Ozaukee County, Wisconsin

ENDANGERED SPECIES ACT SPECIES

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

INSECTS

NAME	STATUS
Hine's Emerald Dragonfly <i>Somatochlora hineana</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7877	Endangered
Monarch Butterfly <i>Danaus plexippus</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

FLOWERING PLANTS

NAME	STATUS
Eastern Prairie Fringed Orchid <i>Platanthera leucophaea</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/601	Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

-
1. The [Bald and Golden Eagle Protection Act](#) of 1940.
 2. The [Migratory Birds Treaty Act](#) of 1918.

3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are Bald Eagles and/or Golden Eagles in your [project](#) area.

Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the [National Bald Eagle Management Guidelines](#). You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

If disturbance or take of eagles cannot be avoided, an [incidental take permit](#) may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the [Do I Need A Permit Tool](#). For assistance making this determination for golden eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

Ensure Your Eagle List is Accurate and Complete

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

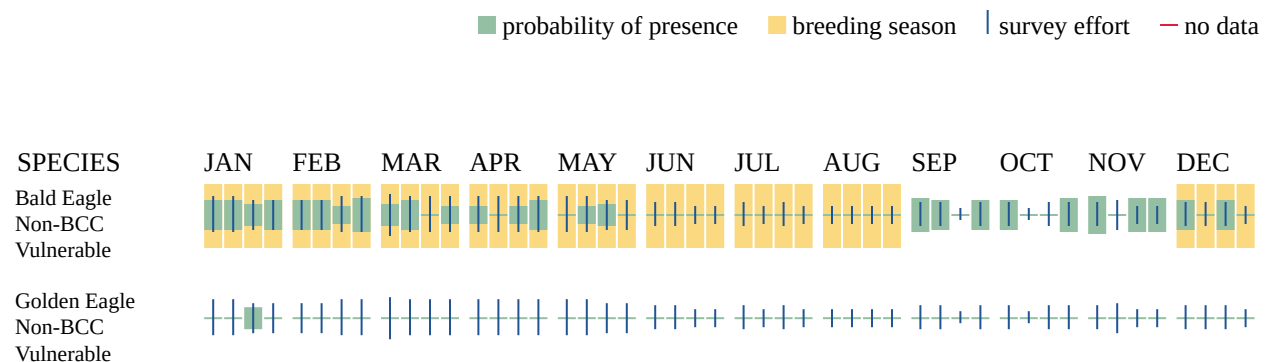
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)

Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (—)

A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Golden-plover <i>Pluvialis dominica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10561	Breeds elsewhere
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Black Tern <i>Chlidonias niger surinamenis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9454	Breeds May 20 to Jul 31
Canada Warbler <i>Cardellina canadensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9643	Breeds May 20 to Aug 10

NAME	BREEDING SEASON
<p>Cerulean Warbler <i>Setophaga cerulea</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/2974</p>	Breeds Apr 22 to Jul 20
<p>Chimney Swift <i>Chaetura pelagica</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/9406</p>	Breeds Mar 15 to Aug 25
<p>Eastern Whip-poor-will <i>Antrostomus vociferus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/10678</p>	Breeds May 1 to Aug 20
<p>Golden Eagle <i>Aquila chrysaetos</i></p> <p>This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.</p> <p>https://ecos.fws.gov/ecp/species/1680</p>	Breeds elsewhere
<p>Golden-winged Warbler <i>Vermivora chrysoptera</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/8745</p>	Breeds May 1 to Jul 20
<p>Grasshopper Sparrow <i>Ammodramus savannarum perpallidus</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p> <p>https://ecos.fws.gov/ecp/species/8329</p>	Breeds Jun 1 to Aug 20
<p>Henslow's Sparrow <i>Centronyx henslowii</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/3941</p>	Breeds May 1 to Aug 31
<p>Lesser Yellowlegs <i>Tringa flavipes</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/9679</p>	Breeds elsewhere
<p>Long-eared Owl <i>asio otus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/3631</p>	Breeds Mar 1 to Jul 15
<p>Marbled Godwit <i>Limosa fedoa</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/9481</p>	Breeds May 1 to Jul 31

NAME	BREEDING SEASON
Pectoral Sandpiper <i>Calidris melanotos</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Ruddy Turnstone <i>Arenaria interpres morinella</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/10633	Breeds elsewhere
Rusty Blackbird <i>Euphagus carolinus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9478	Breeds elsewhere
Semipalmated Sandpiper <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9603	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Upland Sandpiper <i>Bartramia longicauda</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9294	Breeds May 1 to Aug 31
Western Grebe <i>aechmophorus occidentalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental](#)

[Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)

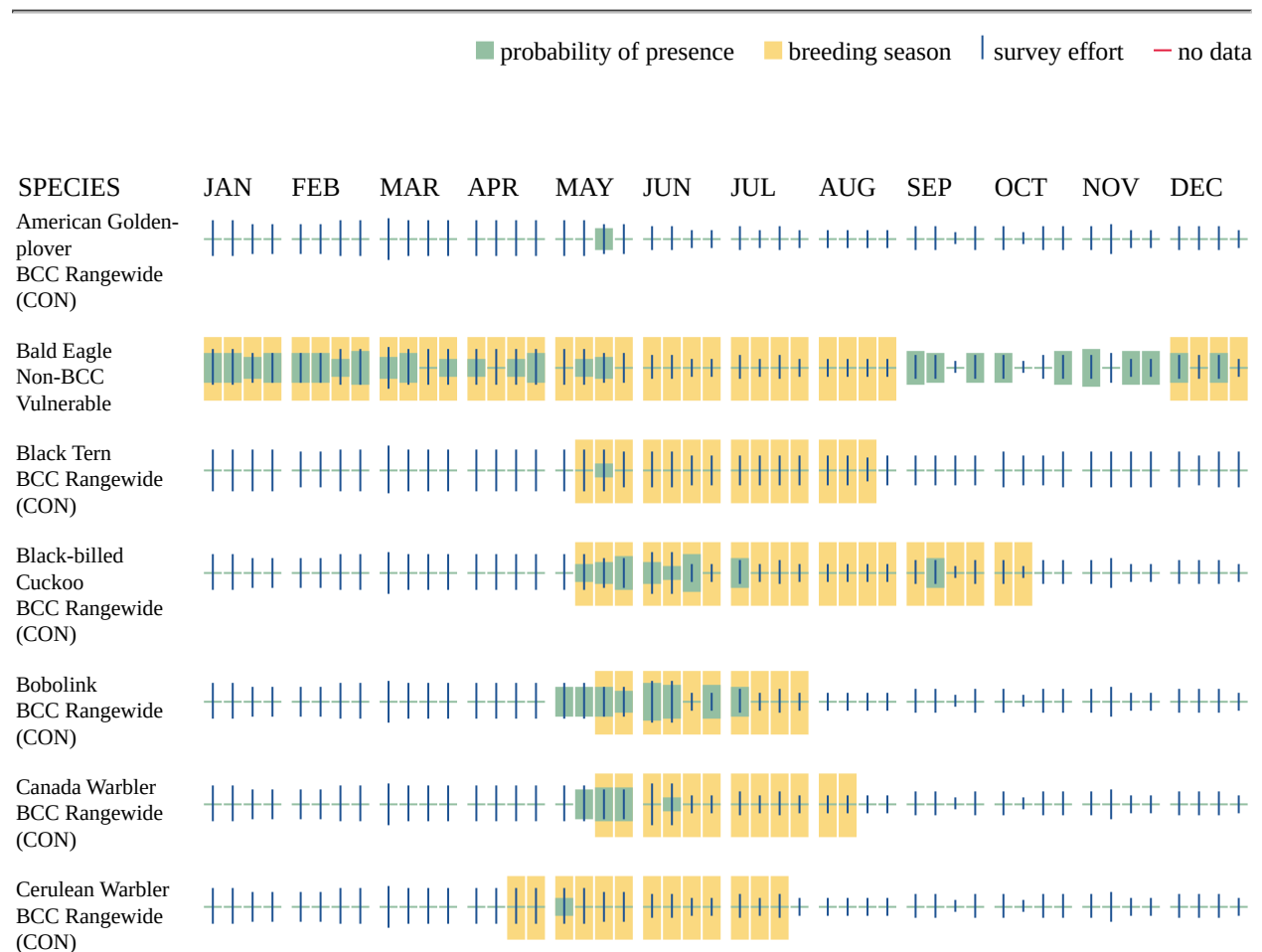
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

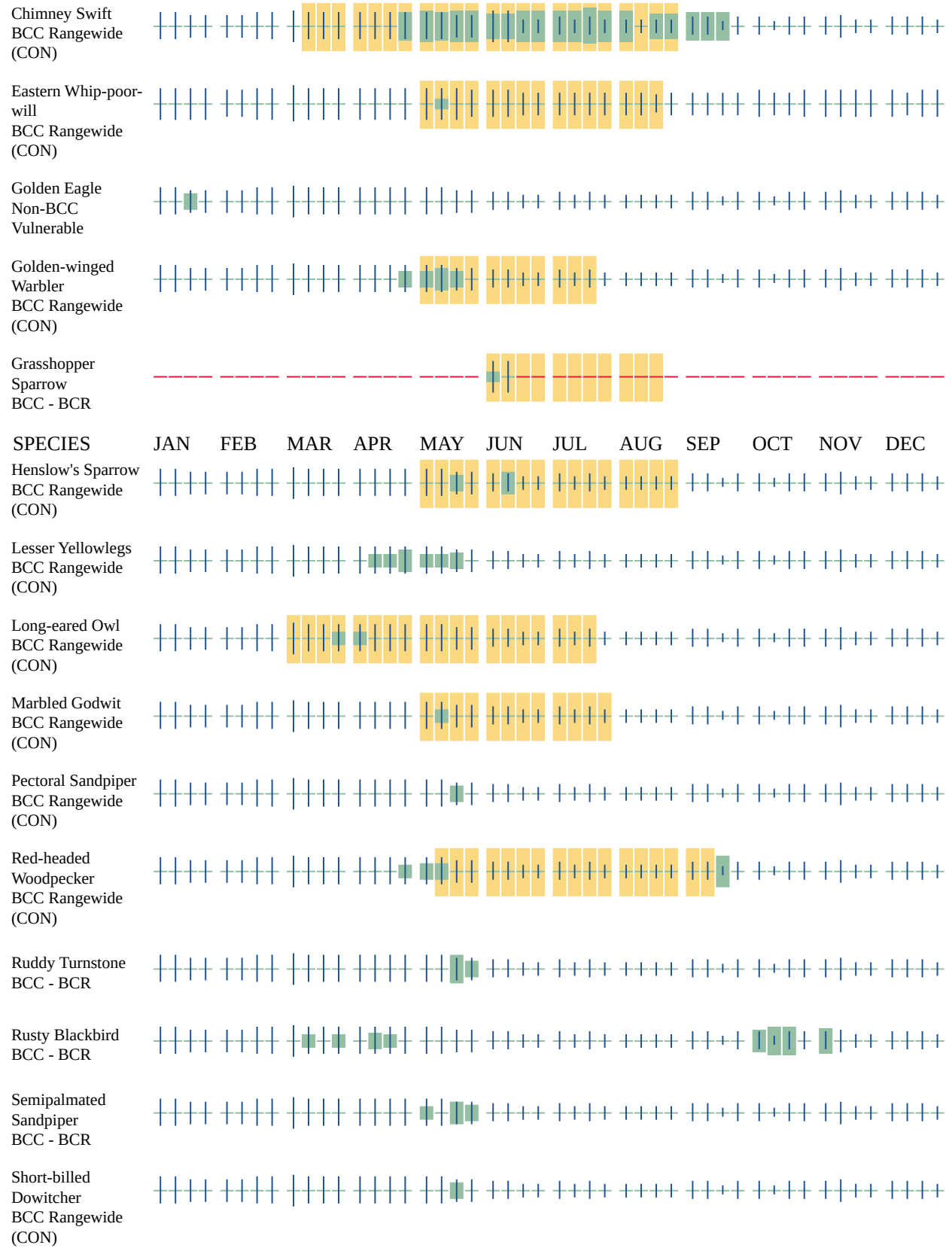
Survey Effort (|)

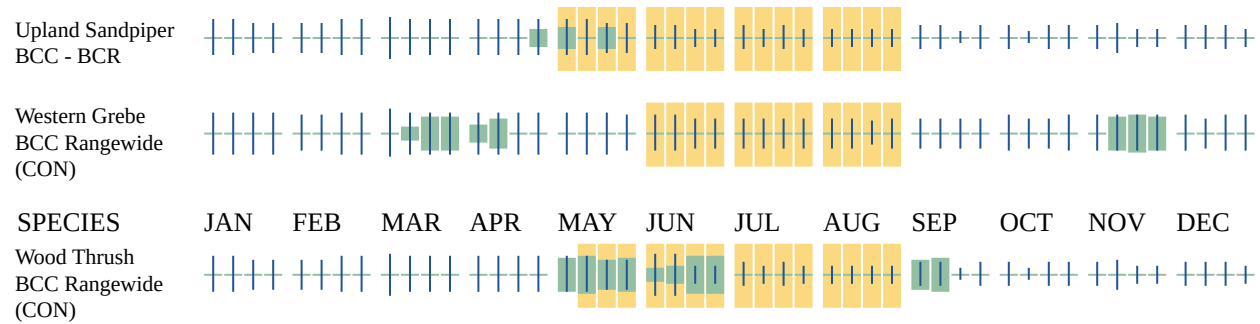
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (—)

A week is marked as having no data if there were no survey events for that week.







Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

WETLANDS

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER POND

- PUBH

FRESHWATER EMERGENT WETLAND

- PEM1C

IPAC USER CONTACT INFORMATION

Agency: Foth Infrastructure & Environmental
Name: Amanda Minks
Address: 5117 West Terrace Drive, Suite 401
City: Madison
State: WI
Zip: 53718
Email: amanda.minks@foth.com
Phone: 6086280585

Appendix E

Endangered Resource Review

**Endangered Resources (ER) Review Verification
Broad Incidental Take Permit/Authorization
for No/Low Impact Activities**

Form 1700-079 (R 05/2024)

Notice: This form is authorized by s. 29.604, Wis. Stats. This completed signed form, once submitted to DNRERReview@wi.gov using the Submit by Email button at the bottom of the form, fulfills the requirement of an Endangered Resources Review and should be attached to other permits requiring an ER Review to show that Endangered Resources requirements have been met. Personal information collected on this form will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Public Records law [ss. 19.31-19.39, Wis. Stats.].

Instructions: Complete this form if your project is covered under the Broad Incidental Take Permit/Authorization for No/Low Impact Activities and therefore does not require an Endangered Resources Review.

Section 1: Applicant and Project Information

Requester Name Amanda Minks		Organization or Agency Name Foth Infrastructure & Environment, LLC			
Project Name Veolia Treatment, Storage and Disposal Facility Permit Ren		County Ozaukee	Township 11 N	Range 22	Section 32
DPS Project # (if applicable)	Telephone Number (608) 628-0585	Email Address amanda.minks@foth.com			

Project Description
Veolia ES Technical Solutions, LLC. (Veolia) is performing a 10 year renewal of the Feasibility and Plan of Operation Report for their existing Treatment, Storage and Disposal Facility (TSDF). As part of the 10 year renewal process, an update to the Environmental Assessment is being performed. The previous Environmental Assessment was performed in 2015. No changes (land use changes, operations changes, etc.) are proposed to occur due to the continued existence of their TSDF.

Indicate who you are completing this form as:

- ☐ DNR Staff
☐ Certified Reviewer
☐ Other:

Section 2: Broad Incidental Take Permit/Authorization Coverage Information

How is your project covered under the Broad Incidental Take Permit/Authorization for No/Low Impact Activities?

- ☒ It is included in the list of activities in Table 1 – No/Low Impact Table for All Species at All Times of the Year.
☐ It is included in the list of activities in Table 2 – No/Low Impact Table by Taxa Group for DNR Staff and ER Certified Reviewers Only and the Taxa groups for the species of concern are covered.
☐ It is included in the list of activities in Table 2 – No/Low Impact Table by Taxa Group for DNR Staff ER Certified Reviewers Only and the species of concern are covered by the Avoidance Measures document.

Activity Number(s)

1-A13, Continuing operations

Section 3: Applicant Certification

By my signature below, I certify that to the best of my knowledge, the information stated above is complete and accurate.

Melissa Tumbleson
Signature

2/24/2025
Date Signed

Melissa Tumbleson
Requester/Submitter Name (please print)

Leave Blank – DNR Use Only

Approve/Deny Form ☐

☒ Approved ☐ Denied

DNR Reviewer Name
Angela White

DNR Reviewer Date
02/24/2025



Endangered Resources Preliminary Assessment

Created on **2/7/2025**. This report is good for one year after the created date.

DNR staff will be reviewing the ER Preliminary Assessments to verify the results provided by the Public Portal. ER Preliminary Assessments are only valid if the project habitat and waterway-related questions are answered accurately based on current site conditions. If an assessment is deemed invalid, a full ER review may be required even if the assessment indicated otherwise.

Results

A search was conducted of the NHI Portal within a 1-mile buffer (for terrestrial and wetland species) and a 2-mile buffer (for aquatic species) of the project area. Based on these search results, below are your follow-up actions.

Further actions are required to ensure compliance with Wisconsin's Endangered Species Law (s. 29.604 Wis. Stats.) and the Federal Endangered Species Act (16 USC ss 1531-43).

At least one of the following situations apply (likely not all):

- The species recorded are state or federal threatened or endangered animals or the project is within a range or zone.
- The species recorded are state threatened or endangered plants on public land.
- The species recorded are federal threatened or endangered plants on federal land or involve federal funds or a federal permit.

Therefore you should request an Endangered Resources Review <https://dnr.wi.gov/topic/ERReview/Review.html>. An ER Review is the mechanism to ensure compliance with Wisconsin's Endangered Species Law (s. 29.604 Wis. Stats.) and the Federal Endangered Species Act (16 USC ss 1531-43). The ER Review will list the endangered resources that have been recorded within the vicinity of the project area and follow-up actions may be necessary.

A copy of this document can be kept on file and submitted with any other necessary DNR permit applications to show that the need for an ER Review has been met. This notice only addresses endangered resources issues. This notice does not constitute DNR authorization of the proposed project and does not exempt the project from securing necessary permits and approvals from the DNR and/or other permitting authorities.

Project Information

Landowner name	VEOLIA ES TECHNICAL SOLUTIONS LLC
Project address	1275 MINERAL SPRINGS DR Port Washington, WI 53074
Project description	2025 FPOR Renewal. Endangered Resources Preliminary Assessment #1.

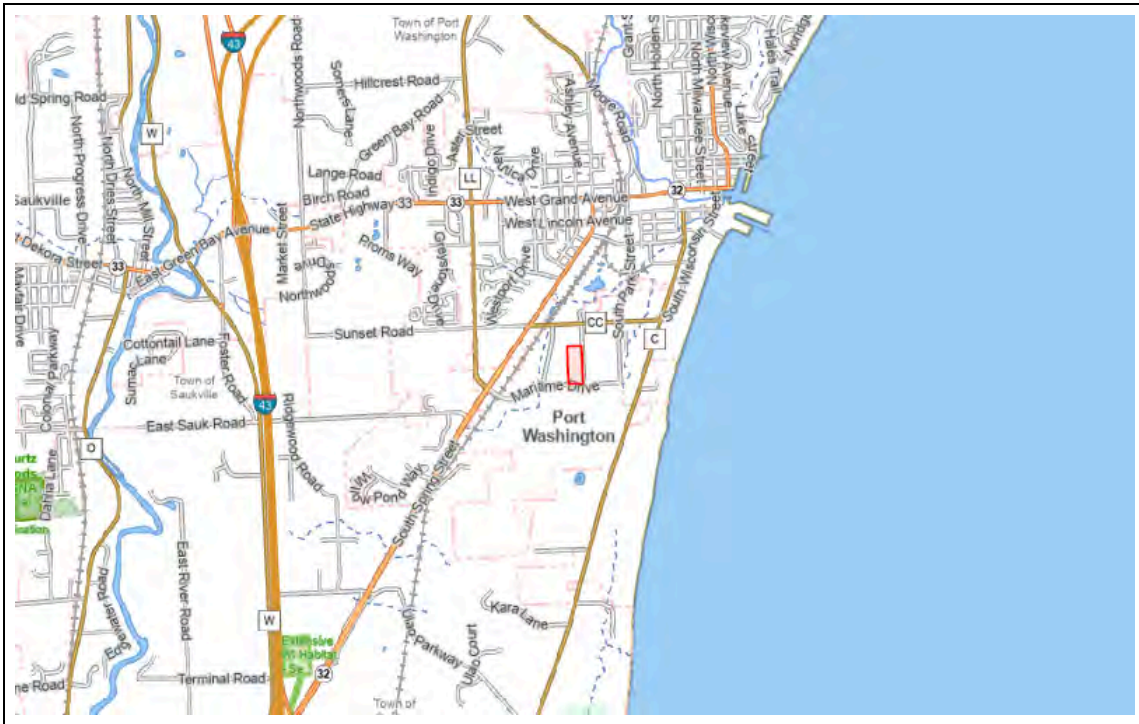
Project Questions

Does the project involve a public property?	No
Is there any federal involvement with the project?	Yes
Is the project a utility, agricultural, forestry or bulk sampling (associated with mining) project?	No
Is the project property in Managed Forest Law or Managed Forest Tax Law?	No
Project involves tree or shrub removal?	No
Is project near (within 300 ft) a waterbody or a shoreline?	Yes

Is project within a waterbody or along the shoreline?	No
-------------------------------------------------------	----

Does the project area (including access routes, staging areas, laydown yards, select sites, source/fill sites, etc.) occur **entirely within** one or more of the following habitats?

Urban/residential	No
Manicured lawn	No
Artificial/paved surface	No
Agricultural land	No
Areas covered in crushed stone or gravel	No



The information shown on these maps has been obtained from various sources, and is of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. Users of these maps should confirm the ownership of land through other means in order to avoid trespassing. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: <http://dnr.wi.gov/legal/>.

<https://dnrx.wisconsin.gov/nhiportal/public>

101 S. Webster Street . PO Box 7921 . Madison, Wisconsin 53707-7921

Appendix NN

Waste Analysis Plan

Waste Analysis Plan (WAP)

VEOLIA PORT WASHINGTON, WI: APRIL 8, 2025



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1.0 General Overview

Pursuant to s. NR 670.014(2)(c) Wis. Adm. Code, Veolia ES Technical Solutions, LLC (VESTS) (Facility) must develop and follow a Waste Analysis Plan (WAP) that meets the requirements of s. NR 664.0013, Wis. Adm. Code. The formatting is based on the WDNR's "WAP Example - Preliminary Version 2; Last Revised: January 27, 2023. This WAP establishes procedures for the following:

1. Store, treat, and dispose of each waste container properly and safely.
2. Identify the procedures used for obtaining a waste analysis of each waste container prior to its acceptance at the Facility.
3. The frequency at which analysis of waste occurs to ensure that waste is characterized accurately.
4. Upon waste container receipt, procedures to confirm that:
 - a. The contents conform to the approved waste characterization.
 - b. The wastes and containers match the shipping documents (e.g., manifest) and Land Disposal Restriction (LDR) paperwork.
 - c. Containers meet U.S. DOT standards and are properly labelled.
5. Procedures for handling discrepancies and rejected shipments.
6. When the Facility needs to conduct an analysis of the waste.
7. The methods used to obtain a representative sample.
8. The parameters for which each waste is analyzed and the rationale for selecting these parameters.
9. The test methods used to test for each parameter.
10. A quality assurance/quality control (QA/QC) program for waste sampling and analysis, along with a corrective action program.
11. Procedures to perform the waste determination and characterization for wastes shipped to other facilities.
12. Procedures to comply with the manifesting requirements for inbound and outbound shipments.
13. Procedures to comply with LDR requirements for inbound and outbound shipments.
14. Recordkeeping and reporting procedures associated with these activities.

The Facility uses competent individuals as defined in section [1.1 Definitions](#) of this WAP in all aspects in the implementation of this WAP. The minimum training requirements for these individuals are established in the training program required by s. NR 664.0016, Wis. Adm. Code.

Section NR 662.011, Wis. Adm. Code, requires Wisconsin generators to make an accurate waste determination. This WAP helps the Facility use this information to safely handle the wastes it receives and assists the Facility's customers in achieving compliance.

Emphasis is placed upon obtaining accurate information about the chemical and physical makeup of each waste received by the Facility. This information, which is to be detailed in a Waste Information Profile (WIP) is maintained as part of the Facility record and is based on analytical testing of a representative sample of the waste using a laboratory certified or registered under ch. NR 149, and/or is a knowledge-based determination that meets the "acceptable knowledge" criteria as defined in section [1.1 Definitions](#) of this WAP.

The Facility accepts waste in a variety of container configurations such as "containerized waste", "bulk container waste", "bulk or consolidation packs", and "lab packs". These terms are defined

in section **1.1 Definitions**. The Facility also accepts wastes in a variety of physical forms, including for example liquids, sludges, solids, layered (or multi-phased), and compressed gases. In addition to hazardous wastes regulated under Resource Conservation and Recovery Act (RCRA) and similarly under chs. NR 660-673, Wis. Adm. Code, the Facility also accepts nonhazardous waste and universal waste. These wastes may also be subject to additional regulatory requirements such as the Toxic Substances Control Act (TSCA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) also known as Superfund, as well as Chs. NR 500-544, Wis. Adm. Code.

1.1 Definitions

For the purposes of this WAP the Facility uses the following definitions.

“Accept” or “Acceptance” means the time when waste screening (i.e., Level I/II/III analysis) is complete and the Facility signs line 20 of the manifest. Acceptance does not prevent the Facility from later rejecting the waste.

“Acceptable Knowledge” means knowledge-based determinations that are based on relevant and reliable (i.e., verifiable) information from any source that indicates that the waste is either a hazardous waste or non-hazardous waste under subchapter C and D of chapter NR 661 Wis. Adm. Code; which hazardous waste codes(s) apply; and which exclusions or restrictions pertain to management of the waste.

“Bulk Container Waste” or “Bulk Waste” or “Bulk Load” means waste that is received and shipped in containers that have a volumetric capacity greater than 119 gallons, such as Intermediate Bulk Container (IBC, also known as totes) as defined at 49 CFR 171.8, cubic yard boxes, tanker trucks, roll-off containers, and lugger boxes.

“Bulk Container” is defined by the DOT 49 CFR 171.8 as packaging, other than a vessel or a barge, including a transport vehicle or freight container, in which hazardous materials are loaded with no intermediate form of containment. Large Packaging in which hazardous materials are loaded with an intermediate form of containment, such as one or more articles or inner packages, is also bulk packaging. Additionally, a bulk packaging has:

- (1) A maximum capacity greater than 450 L (119 gallons) as a receptacle for a liquid;
- (2) A maximum net mass greater than 400 kg (882 pounds) and a maximum capacity greater than 450 L (119 gallons) as a receptacle for a solid; or
- (3) A water capacity greater than 454 kg (1000 pounds) as a receptacle for a gas as defined in § 173.115 of this subchapter.

“Bulk or Consolidation Packs” means containers that hold smaller containers of one type of material (e.g., paints, lamps). Each bulk or consolidation pack container is prepackaged in accordance with applicable U.S. DOT regulations. Other examples of wastes packaged in this way include spent batteries, and palletized boxes of Original Design Manufacturer/Original Equipment Manufacturer (ODM/OEM) chemicals that have been shipped in the original manufacture-approved outer containers.

“Consolidation” or **“Commingling”** or **“Bulking”** means the act of combining the contents of one container or tank with the contents of another container or tank, such that they are in contact with each other. Lab-packing/repacking does not constitute consolidation.

“Competent Individual” means a person by way of training and/or experience, is knowledgeable of applicable standards pertaining to their job description.

“Container” per s. NR 660.10(14) Wis. Adm. Code means any portable device in which a material is stored, transported, treated, disposed of or otherwise handled (e.g., sacks, flasks, pails, bags, boxes, gas cylinders, drums, IBCs, cubic-yard boxes and bags, and tanker trucks).

“Depacking” means the act of separating the contents of a lab pack and consolidating the inner contents of containers with other compatible inner container contents.

“Discrepancy” means a difference between the waste received at the Facility when compared to its WIP, the manifest or bill of lading, and the LDR document (if applicable) that may affect the information that must be known to properly treat, store, or dispose of the waste per NR 664.0013. Examples of discrepancies include all of the following:

- The container differs from the information provided on the manifest or shipping paper.
- The waste is a different waste stream than the waste described in the WIP.
- The waste codes in the WIP, manifest, and LDR document do not align.

“Facility” means Veolia ES Technical Solutions, L.L.C. (VESTS), 1275 Mineral Springs Drive, Port Washington, Wisconsin, EPA I.D. WID988566543

“Fingerprint Analysis” means the sampling and analysis of several key chemical and physical parameters of a waste to substantiate or verify the composition of a waste as determined previously during a full-scale waste characterization/determination. Parameters for analysis may be a subset of the parameters used during full-scale characterization, or they may be parameters that are not normally present in the waste to verify the absence of certain constituents.

“Fuel Blending” means combining compatible hazardous wastes that possess heat value with other compatible materials that also possess substantial heat value (e.g., used oil, spent solvent) to create a waste that is amendable to burning for energy recovery. Fuel blending is hazardous waste treatment that requires a license.

“Lab Pack” means an over-packed container, usually a steel, fiber, or polyethylene drum, containing a variety of small containers of chemicals of the same U.S. DOT hazard class packed in nonbiodegradable absorbent materials. Each lab pack container is prepackaged in accordance with applicable U.S. DOT regulations that are based on compatibility, content, and size of individual samples. An inventory-packing list accompanies each lab pack container and identifies, among other things, the content, quantity, and size of each container within the lab pack, and applicable hazardous waste code(s).

“Lab-packing” or “Lab-packing/Repacking” means when small containers of hazardous waste are placed into a larger container while remaining in the original smaller container, with the intention to not allow the waste contents to mix.

“Licensed RCRA Unit” or “Licensed Unit” means a unit that has a hazardous waste license number assigned to it and meets the definition of “hazardous waste management unit” in s. NR 66110(54) Wis. Adm. Code.

“Manufactured Article” means a device this is designed for a purpose other than to access the chemicals that are present within the device. For example, one uses these articles for electrical energy (batteries), light (lamps) or to measure temperature (thermometers).

“Processing” or “Process” means when the contents of a container or tank are added to a different container or tank or combined with other wastes or materials or are otherwise treated in a manner not requiring a hazardous waste license. The following are examples of license-exempt processing activities:

- Consolidation or commingling or bulking
- Lab-packing, unpacking, and repacking
- Elementary neutralization
- Wastewater Treatment Unit treatment
- Qualifying treatability studies

Proper processing requires that wastes are only combined or comingled when compatible with the container and the other wastes or materials.

“Receive” or “Receipt” is the act of the TSD facility signing and dating the manifest (section 20) to certify that the hazardous waste covered by the manifest is present at the facility. Any exception(s) to the manifest will be noted in the discrepancy space of the manifest. This includes any hazardous waste that is rejected as noted on the manifest.

“Repackaging” or “Recontainerization” occurs when the contents one a container are moved to another container without mixing with another waste. This includes placement of a container into an overpack container.

“Shipment” means a container or containers that is delivered in the same transportation vehicle.

“Trans-ship” means to accept a waste into the Facility and then shipped to an off-site Facility; the waste remains in its original container and the waste does not undergo any type of treatment or processing.

“Waste Information Profile (WIP)” means written documentation for a specific waste stream that is intended to contain all the information which must be known by the Facility to properly process, treat, store, and/or transship the waste according to this chs. NR 664 and NR 668, Wis. Adm. Code.

“Waste Analysis” means waste information gathered from analytical testing of representative samples and from knowledge-based determinations.

“Waste Stream” means a single type of solid waste or hazardous waste from a single generator.

“ZZ Manifest” means shipping paper formatted the same as a hazardous waste manifest but intended for use as a Bill of Lading in shipping non-hazardous wastes and/or wastes not subject to EPA manifesting requirements.

1.2 Facility Activities

Storage:

The following is a list of licensed container storage areas (Hazardous Waste Storage License #6008):

- Storage Room 1: Pod 1A and Pod 1B
- Storage Room 2: Pod 2A, 2B and 2C
- Storage Room 3: Pod 3A, 3B, 3C, 3D, 3E and 3F

The following is a list of licensed tank storage areas:

- Not Applicable: The Facility does not have any licensed tank storage areas.

Processing:

The following is a list of processing activities and areas:

- Container Storage Areas (Hazardous Waste Storage License #6008)
 - Lab Packing/Repacking
 - Consolidation into Containers
 - Container Storage
 - Universal Waste Consolidation and Collection
- Tanker Bulk Loading.
- Roll-Off Bulk Loading.
- Florescent lamp processing area (northern section of building)
- Household hazardous waste collection and consolidation
- Nonhazardous solid waste storage and processing (License #3870)

Treatment:

The following is a list of licensed hazardous waste treatment activities and areas:

- Mercury retort system (Hazardous Waste Treatment License #4585)
 - Three mercury reclamation/recovery retort ovens (western section of the building)

2.0 Waste Prequalification

All waste approved to be shipped to or accepted by the Facility will be approved through the waste prequalification process. As described in section [3.0 Waste Analysis](#) of this WAP, the prequalification process requires completion of a Waste Information Profile (WIP) by the generator or their authorized agent, and review and approval of the WIP by the Facility. Wastes which do not meet the prequalification requirements of having a WIP approved by the Facility

and/or have hazardous waste codes that the Facility is not authorized to accept (section [4.0 Acceptable Waste Codes](#) of this WAP) are not accepted by the Facility.

All shipments of waste to the Facility will be scheduled. The Facility will not approve the schedule of any shipment of wastes that have not been prequalified through the WIP process described herein. Unscheduled shipments of wastes will not be accepted until the Facility confirms with the generator that the shipment is intentional and is properly represented by the accompanying manifest and shipping papers.

The Facility does not accept “unknown” wastes. If an unknown waste is delivered to the Facility without the Facility’s knowledge or consent (e.g., waste left at a gate during the night, or an unidentified waste accompanies a waste delivery and is off-loaded by the Facility), then the Facility either rejects the waste or makes a waste determination in accordance with s. NR 662.011 Wis. Adm. Code for the purpose preparing the waste for proper shipment to an appropriate off-site Facility, and preforms the waste analysis required by s. NR 664.0013, Wis. Adm. Code, prior to placing the waste into storage

For any authorized agent that represents the generator (such as consultants or brokers), the Facility will obtain written evidence that demonstrates that the agent has authority to act on behalf of the generator for the purpose of arranging for the management of the generator’s waste stream.

3.0 Waste Analysis

Section 664.0013(1) Wis. Adm. Code requires that the Facility obtain a detailed chemical and physical analysis of a representative sample of a waste. This analysis will contain all the information which will be known to treat, store, or dispose of the waste according to chapters NR 664, 668 Wis. Adm. Code and the conditions of the Facility’s license. The Facility uses the following methods to meet this requirement:

Representative Sample and Analysis

When available generator knowledge is inadequate to determine whether the waste exhibits one or more hazardous characteristics, the waste analysis will contain results from analytical testing of a representative sample in the manner consistent with the generator requirements of s. NR 662.011(4)(b) Wis. Adm. Code.

The waste analysis requirements for analytical testing are met when a representative sample of the waste identifies the chemical and physical characteristics and composition of a waste. Section 664.0013(1)(a)1. Wis. Adm. Code requires that chemical and physical samples to be analyzed (except for field analyses for pH, specific conductance and temperature) by a laboratory certified or registered under ch. NR 149; this includes waste received by the Facility from in-state and out-of-state generators.

The waste analysis will include, as supporting information, a description of how the samples used were representative samples, and the laboratory’s report(s) showing the analytical methods, detection limits, results, and quality control checks.

Knowledge-Based Information

In lieu of analytical testing on a representative sample, the waste analysis requirements for knowledge-based determination are met when the knowledge base determination meets “acceptable knowledge”. In this case the waste analysis will contain information consistent with the generator requirements of s. NR 662.011(4)(a) Wis. Adm. Code. Acceptable knowledge may include any of the following:

- Process knowledge, which describes information about chemical feedstocks and other inputs to the production process.
- Knowledge of products, by-products, and intermediates produced by the manufacturing process.
- Chemical or physical characterization of wastes.
- Information on the chemical and physical properties of the chemicals used or produced by the process or otherwise contained in the waste
- Testing that illustrates the properties of the waste. A test other than a test method set forth in subchapter C chapter NR 661 Wis. Adm. Code, or an equivalent test method approved by the department under s. NR 660.21 Wis. Adm. Code, may be used as part of a person’s knowledge to determine whether a solid waste exhibits a characteristic of hazardous waste. However, such tests do not, by themselves, provide definitive results.
- Relevant information about the properties of the waste or its constituents.
- Analytical results (i.e., numbers) used in knowledge-based determination will be supported.

If a non-NR 149 laboratory data is used by the generator to show if a waste is or is not a characteristic waste and/or to describe other waste properties, then the Facility requires the generator to submit suitable laboratory quality control information (such as laboratory audit results) and or other laboratory certifications. The Facility will review this information and conclude that it demonstrates equivalency to that which a laboratory certified or registered under ch. NR 149 must achieve, prior to approving the waste stream.

3.1 Waste Information Profile (WIP)

Each waste stream accepted by the Facility is described in an approved WIP. For the approved WIP and associated documentation to be complete, it must contain all the information identified in [3.1.1 WIP Content](#) and [3.1.2 WIP Review and Approval](#) below.

3.1.1 WIP Content

Documentation from the generator or their authorized agent:

1. A detailed description of the process that generated the waste.
2. If sampling was used to determine if the waste is or is not a characteristic hazardous waste, then a description on how the samples collected are a representative sample.
3. If generator knowledge was used by the generator, a complete set of the information described in NR 662.011(4)(a) Wis. Adm. Code such as process knowledge, which describes information about chemical feedstocks and other inputs to the production process; knowledge of products, by-products, and intermediates produced by the manufacturing process; chemical or physical characterization of wastes; information on the chemical and physical properties of the chemicals used or produced by the process or otherwise contained in the waste; testing that illustrates the properties of the waste; or other reliable and relevant information about the properties of the waste or its

constituents. Such information will be organized or presented in a logical way that illustrates how it supports the generator's conclusions. The information and documentation comprising acceptable knowledge needs to be accurate and complete in order to correctly identify the waste.

The Facility objectively reviews the information provided by the generator. Therefore, the Facility explains in its WAP how the Facility determines that generator's knowledge-based determination is valid. This includes but is not limited to finding proper support for numbers that are used in knowledge-based determinations (e.g., pH 3 to 5, flashpoint greater than 140, lead concentration less than 5 mg/l), and whether the information provided by the generator demonstrates the generator's competence in complying with the determination requirements of s. NR 661.011(4) and (5) Wis. Adm. Code, and the information requirements of s. NR 661.011(6) Wis. Adm. Code.

4. The generator's hazardous waste determination that shows compliance with s. NR 662.011 Wis. Adm. Code.
5. Laboratory analytical reports as needed to support an accurate waste determination under NR 661.011 and an accurate waste analysis under NR 664.0013(1)(a), unless acceptable knowledge does not necessitate them.
6. The waste's waste analysis meets section [3.0 Waste Analysis](#) of this WAP.
7. All of the information which will be known by the Facility to treat, store, or dispose of the waste according to chapters NR 664, 668 Wis. Adm. Code and the conditions of the Facility's license.
8. Determination if the hazardous waste has a Volatile Organic Compounds (VOCs) concentration of at least 500 Part per Million by Weight (ppmw). If so, then the container is subject to subchapter CC of chapter NR 553, Wis. Adm. Code.
9. An LDR document in compliance with s. NR 668.07(1) Wis. Adm. Code.
10. If applicable, a SDS for waste that is a commercial chemical product (excluding household-generate wastes and lab packs).
11. WIP approval documentation, described in [3.1.2 WIP Review and Approval](#).
12. Every three years, a signed statement that certifies the waste generating process and the chemical and physical characteristics of the waste remain unchanged and that the WIP remains complete and accurate, described in [3.1.2 WIP Review and Approval](#).

The WIP form used by the Facility to capture this information is included in [Appendix A](#). The WIP form will be accompanied by supportive documents as necessary to address all of the required information included in the WIP form. Each approved WIP is identified by a unique number. The manifest or shipping paper accompanying each delivery of waste clearly will identify the WIP number for each different waste stream in the delivery.

[3.1.2 WIP Review and Approval](#)

A WIP will be completed, signed, and submitted by the generator or the generator's authorized agent for each waste stream (including nonhazardous waste) that is proposed to be accepted and placed into the Facility's licensed units.

The WIP and laboratory analysis will be evaluated to determine whether it contains all the necessary information to determine how to treat, store or dispose of the waste in accordance with Chapter

NR 664 and Chapter NR 668. If the generator provides a questionable certified waste profile, the Operations Manager, through a centralized approval department or alternative department, may request the generator to supply additional information. If further characterization is necessary, the generator will be requested to provide a representative sample of the waste collected in accordance with methodology described in NR 661 Appendix I (NR 664.0013(2)(c)). The representative sample will be submitted to a laboratory for analysis based on the waste type. The necessary parameters for the safe handling and proper classification will be tested. Additional specialty qualitative testing may be conducted of the waste (e.g., drum vapor head space monitoring) to determine the potential presence of toxic fumes or vapors.

Based on the information provided in the WIP, the Facility must do one of the following:

1. Approve the WIP.
2. Determine that the WIP requires additional information before making an approval determination.
3. Deny the WIP.

After one of these decisions is made, the Facility notifies the generator of the decision and maintains documentation of this notification with the WIP in the operating record.

The following are examples of when the Facility requires additional information before the Facility makes a determination to accept the waste into the Facility:

- Required information is omitted from the WIP. For example, the generator did not provide sufficient information about the process generating the waste or how the samples were collected.
- The information in the WIP is inconsistent. For example, the generator classifies that waste as an acidic solution, but the waste has a pH value of 14.
- The generator does not provide sufficient information which must be known to safely store and treat the waste. For example, the generator classifies the waste as a D003 but fails to identify why the waste carries the D003 waste code. Is it due to the waste being an explosive, generating toxic gases, or reacts violently with water?

An incomplete or internally inconsistent WIP cannot be approved and therefore the waste cannot be accepted into the Facility. In all cases, if the Facility is not confident that a waste has been sampled or characterized accurately, or if knowledge-based information is not adequately supported, then the Facility cannot approve the waste for acceptance into the Facility.

When a Generator submits a WIP that is classified as Non-hazardous, Veolia implements a comprehensive evaluation process to ensure the waste is indeed non-hazardous and should not be classified as RCRA regulated waste. This multi-step verification procedure is designed to maintain compliance with environmental regulations, protect public health and safety, and uphold Veolia's commitment to responsible waste management practices.

The process encompasses the following key elements:

1. Thorough WIP Review: Veolia's team of experienced environmental specialists meticulously examines the submitted WIP to ensure it is completed correctly, accurately, and in full compliance with regulatory requirements. This includes verifying all relevant fields are properly filled out and cross-referencing the information provided against known waste characteristics

and industry standards.

2. **Supporting Documentation Request:** To further validate the non-hazardous classification, Veolia requires the Generator to provide at least one of the following supporting documents:
 - a. **Safety Data Sheet (SDS):** An up-to-date SDS is requested to review the chemical composition, physical properties, and potential hazards associated with the waste material.
 - b. **Analytical Results:** Comprehensive laboratory analysis reports are solicited to determine the exact chemical constituents and concentrations present in the waste stream.
 - c. **Additional Information:** Veolia may request supplementary details about the waste generation process, handling procedures, or any other relevant information that could impact the waste classification.
3. **Expert Evaluation:** Veolia assesses all provided documentation and information. They utilize their extensive knowledge of RCRA regulations, waste characterization methodologies, and industry best practices to determine if the non-hazardous classification is appropriate.
4. **Clarification and Follow-up:** If any discrepancies or ambiguities are identified during the review process, Veolia's specialists will proactively engage with the Generator to seek clarification or request additional information. This ensures a comprehensive understanding of the waste stream and its potential environmental impact.
5. **Final Determination:** Based on the thorough evaluation of the WIP, supporting documentation, and any additional information obtained, Veolia makes a final determination regarding the waste classification. This decision is documented and communicated to the Generator.
6. **WIP Approval:** Only after all necessary steps have been completed and the non-hazardous classification has been confirmed will Veolia approve the WIP. This approval signifies that the waste can be managed as non-hazardous per applicable regulations and Veolia's stringent environmental standards.

By adhering to this verification process, Veolia ensures that all waste streams are properly classified, handled, and disposed of in an environmentally responsible manner. This approach not only safeguards regulatory compliance but also minimizes potential risks to human health and the environment while maintaining the integrity of Veolia's waste management operations.

The Facility documents the approval of each WIP, along with the approval date, the name of the individual who made the approval, and all conditions of approval that will be followed by the generator/agent or transporter. This approval is retained with that WIP and its supporting documentation. The WIP, all supporting documentation, and the approval is retained as part of the Facility's operating record and made available as may be needed to persons performing Level I or II analyses. This documentation will also include any subsequent corrections or supplementary information to the WIP along with its approval. Each part of the documentation will be clearly identified as part of the WIP, such as by marking it with the unique WIP number. These operating record requirements can be achieved with electronic documents provided they are properly organized, secured from unauthorized editing, and readily available.

3.1.3 WIP Updates

In accordance with s. NR 664.0013(1)(c), Wis. Adm. Code, the WIP process will be repeated as necessary to ensure that it is accurate and up to date. At a minimum, this will occur when:

1. The Facility is notified by the generator or authorized agent, or the Facility has reason to believe, that the process or operation generating the waste has changed.
2. The results of the inspection of wastes indicate that the waste received at the Facility:
 - a. Does not match the waste described in the WIP.
 - b. The waste differs from waste previously received from the generator that has the same WIP.
 - c. The WIP was approved more than 3 years prior to receipt.

In accordance with s. NR 664.0013(1)(a)1, Wis. Adm. Code, chemical and physical samples used to support the WIP will be analyzed by a laboratory certified or registered under ch. NR 149, Wis. Adm. Code, except for certain field analyses. See [Section 3.0](#) if a non-NR 149 certified laboratory is used. In accordance with s. NR 664.0013(1)(a), only representative samples are used to obtain the detailed chemical and physical analysis.

As evidence to support a generator's knowledge-based determination, a generator may use a test method other than the test methods set forth in subch. C of ch. NR 661 Wis. Adm. Code or an equivalent test method approved by the department under s. NR 660.21 Wis. Adm. Code. However, these tests methods cannot be used, by themselves, to make a determination if a solid waste exhibits a characteristic of a hazardous waste (s. NR 661.011(40)(a) Wis. Adm. Code).

Each WIP's approval lasts for three years from the date that the WIP was last approved by the Facility. For the waste to be accepted again, the generator or authorized agent must provide a statement signed by the generator or authorized agent that certifies the waste generating process and the chemical and physical characteristics of the waste remain unchanged. If changes have occurred to the process generating the waste, then a new WIP is required. The WIP will document any changes in the process generating the waste and be supported by generator knowledge or detailed chemical and physical analysis of a representative sample of the waste. Where chemical analysis is provided the analysis will be consistent with the analysis that was originally used for the classification of the waste and where applicable, address any changes that have been made to the process generating the waste.

If a signed certification statement is not returned to the Facility, the WIP approval is voided. Records documenting these actions are kept with the WIP's documentation package for at least 3 years from the date that the waste that is the subject of the documentation was last sent to on-site or off-site treatment, storage, or disposal. The 3-year record retention period is automatically extended during the course of any unresolved enforcement action regarding the regulated activity or as requested by the department (s. NR 668.07(1)(h) via 668.07(2)(e) Wis. Adm. Code).

3.2 Determination of Outbound Designated Facility

As part of the prequalification process during WIP approval, the Facility also identifies the designated outbound Facility(s) to which the Facility can or intends to ship the waste, and (as

applicable) its treatment residues, after the waste has been received by the Facility. Selection of the designated outbound Facility is based on the WIP, assigned RCRA hazardous waste codes, any applicable land-disposal restriction regulations, generator request/requirement, and any requirements or restrictions of the designated Facility's license. The WIP cannot be approved unless the waste meets the acceptance criteria of the outbound designated Facility(s) and the outbound Facility(s) is reasonably anticipated to be available.

4.0 Acceptable Waste Codes

This Facility is licensed to accept certain hazardous waste codes. See the current Part A application of the license for a full list of the hazardous waste codes that the Facility is allowed to accept. As a matter of convenience, the waste codes listed in part A have been included in [Appendix J](#) Part A Waste Codes. Additional waste codes may be accepted only after a license modification is approved. In addition, the Facility does not accept the wastes identified in section [8.0 Restricted Wastes](#) of this WAP.

5.0 Shipment Screening, Analysis, and Acceptance

When the Facility receives a shipment of waste, the Facility must successfully complete, and document completion of, the following procedures in order to accept the waste and place it into a licensed hazardous waste unit. Reference facility Standard Operation Procedure OP-01 (document number 999A117), Waste Shipping and Receiving Procedure, for more information in [Appendix K](#): Waste Shipping and Receiving Procedure (some of which is also described below).

1. Review the manifest or shipping paper for accuracy and completeness and resolve any inaccuracies and/or items of incompleteness (see [9.0 Manifest and Bill of Lading Discrepancies](#) of this WAP).
2. Confirm receipt of and review the LDR document for accuracy and completeness; resolve any inaccuracies and/or items of incompleteness.
3. Review the WIP, manifest or shipping paper, and LDR document for discrepancies between them and resolve any discrepancies. Record these discrepancies and how these discrepancies were resolved in the Facility operating record.
 - a. VESTS receiving and technical personnel compare shipping documents and material description against the material profile sheets, and the material actually received. The shipping documents may consist of a Bill Of Lading (BOL), or a Uniform Hazardous Waste Manifest, or a ZZ Manifest, and/or a Land Disposal Restriction (LDR) form. All manifests must be signed within 24 hours of receipt. If the shipment contains laboratory packaged chemicals (lab packs) the shipping paper will be accompanied by a packing list itemizing the contents of the container. PCB Continuation Forms will accompany the shipping papers associated with PCB shipments.
 - b. All paperwork must be kept together and intact for submission to the receiving clerk for further processing and eventual filing.
4. Check container labels for accuracy and consistency with the WIP and resolve any inaccuracies and/or items of incompleteness.
5. Check the condition of each container and the type of container used for that waste and verify that the container is U.S. DOT approved. If not in a U.S. DOT approved container, then the Facility must repackage the waste into an approved U.S. DOT container, if needed to assure safe storage and prior to shipment to the designated Facility. The Facility checks to confirm that the container is not leaking, properly closed and meets U.S. DOT standards.

6. Verify that each container type, and size is consistent with the information in the WIP and manifest or shipping paper., LDR document, and waste stored in the container.
 - a. As the truck is unloaded, all containers and materials are visually inspected to verify that the shipment contains only the waste materials as described in the material profile sheet and shipping documents.
 - b. Receiving personnel must be especially cognizant when unloading materials to verify against the documentation, the type and quantity of material received.
 - c. All materials received into the Facility are weighed/counted and immediately moved to temporary storage area(s), hazardous material storage pods, or directly to the processing areas. Receiving personnel record the shipment information on
 - d. Appendix L: Veolia ERD Receiving Report (Drum Weight Sheet)).
 - e. The receiving personnel will note weight and manifest # on the top of the material/container so that later matching with a printed identification label is simplified.
7. Assign a unique container number (inventory number) to each container using the Facility's tracking system and affix a durable label marked with that unique number to the container.
 - a. The inventory number is maintained electronically at the TSDF. The electronic database is backed up every 24 hours and the database server is maintained at an off-site Veolia ES North America office (was located in West Allis, Wisconsin in March 2025).
 - b. The inventory labels provide the inventory number, the generator name, the DOT description, the acceptance date, the storage location, and the profile number.
8. The Facility utilizes a tiered approach for analyzing incoming shipments at the Facility.
 - a. Perform a Level I analysis on each shipment received as described in section [5.1 Level I Analysis](#) of this WAP.
 - b. Perform a Level II analysis when the Level I analysis indicates unresolved discrepancies between the waste and its WIP as described in sections [5.2 Level II Analysis](#) of this WAP.
9. In addition to the prequalification requirements described in section [2.0 Waste Prequalification](#) and the waste analysis requirements in section [3.0 Waste Analysis](#) the Facility reviews each lab pack's Lab Pack Contents Form (see Lab Pack Contents Form [Appendix B](#)). If any incompatible or unacceptable material is listed on the Lab Pack Contents Form, the generator or generator's agent is given the option of either arranging for the Facility to properly repack that material or having the lab pack container rejected by the Facility.

Table 1, Required Analyses to be Performed by the Facility for Incoming Waste Shipments, gives an overview of these analyses and **Table 2**, Analytical Parameters and Rationales, summarizes the analytical parameters and rationales used to determine the general and specific characteristics of a waste stream.

Because the VESTS TSDF does not have an on-site NR149 certified laboratory, Level 1 Physical Evaluations (M-1) will be conducted on all inbound hazardous waste containers and bulk loads except for those listed in the Sample-Exempt and Visual Inspection-Exempt List.

On average the volume of hazardous waste received at the facility is approximately 50% of the total waste received at the facility. Most of the waste received at the facility consists of universal waste lamps, waste electronic equipment, and solid mercury-containing hazardous waste such as soil or equipment containing mercury. Therefore, the number of hazardous waste containers that need to go through a Level I Analysis that are not listed on the Sample-Exempt and Visual

Inspection-Exempt list is a relatively small portion of the total waste moved through the TSDF.

VESTS Port Washington Level I – II Analysis Level Plan

Level I Analysis

- Level 1 Analysis (M-1) will be conducted on all inbound hazardous waste containers and bulk loads that are not listed on the Sample-Exempt and Visual Inspection-Exempt list.

Level II Analysis

- If a discrepancy occurs during the Level I Analysis and the waste is not rejected back to the customer.

Table 1: Required Analyses to be Performed by the Facility for Incoming Waste Shipments

Analysis Level		Level I	Level II
Frequency		Each container and bulk load	Unresolved discrepancy from Level 1
Parameter	Analytical Method *	Review Required	When Necessary
Physical Evaluation	M-1	Yes	
pH	M-2		When necessary
Ignitability	M-3		When necessary
Water Reactivity	M-4		When necessary
Reactive Sulfides Screen	M-5		When necessary
Reactive Cyanides Screen (Spot Test)	M-6		When necessary
Oxidizer Screen	M-7		When necessary
Specific Gravity	M-8		When necessary
% Suspended Solids	M-9		When necessary
Chlorine Spot Test	M-10		When necessary
Polychlorinated Biphenyl (PCB) Screen	M-11		When necessary
TCLP***	M-12		When necessary
Based on discussions with the customer additional parameters will be determined			When necessary
Any other parameter necessary to confirm that the waste matched the WIP and that the waste can be properly managed		When necessary	When necessary

* See Table 2: Analytical Parameters and Rationales.

*** TCLP s-VOCs, VOCs and metals

Sampling-Exempt and Visual Inspection-Exempt Materials:

The following wastes do not require sampling and/or analytical testing for Level I and Level III analysis unless the analytical testing is needed comply with chs. NR 660 to 679 Wis Adm. Code. **A physical evaluation (method M-1) will be conducted for all hazardous wastes.**

1. Household hazardous waste as defined by s. NR 661.0004(2)(a) Wis. Adm. Code.
2. Empty hazardous waste containers as defined in s. NR 661.0007 Wis. Adm. Code.
3. The listed commercial chemical products as defined under s. NR 661.0033(1) to (4) Wis. Adm. Code that are in their original container. The WIP must include an SDS. Examples:
 - a. Any unused commercial chemical products that appear on the U listing.
 - b. Any unused commercial chemical products that appear on the P listing.

4. Non-listed commercial chemical products that are not defined under s. NR 661.0033(1) to (4) Wis. Adm. Code, are unused, and are in their original container. The WIP must include a SDS. Examples:
 - a. Non RCRA empty aerosol cans, gas cylinders, and propane cylinders.
 - b. Paints.
 - c. Pharmaceuticals as defined by s. NR 666.500(9) Wis. Adm. Code.
5. Manufactured articles as defined in section 1.1 Definitions. Examples:
 - a. Video Monitors.
 - b. Universal waste lamps, batteries, and mercury containing equipment.
 - c. Cathode ray tubes (CRTs).
 - d. Hydraulic equipment.
 - e. Computers.
 - f. Cell phones.
6. Lab packs as defined in section 1.1 Definitions.
7. Contaminated environmental media (e.g., soil, groundwater) when the contamination is due to a release of a known chemical substance, commercial product, or waste, as established in the approved WIP.
8. Contaminated personal protective equipment (PPE).
9. Debris as defined by s. NR 668.02(7) Wis. Adm. Code generated only from construction or demolition activities involving a known chemical substance, commercial product, or waste, as established in the approved WIP. Examples:
 - a. Construction of a healthcare Facility's x-ray room that resulted in the generation of scrap wallboard covered with lead sheeting.
 - b. Removal of asbestos insulation from a pipe run that contains lead paint.
 - c. Demolition of a wall covered in lead paint.
10. Sampling poses an unnecessary hazard of acute or chronic exposure of VESTS Port Washington employees to carcinogenic, mutagenic, neoplastigenic, teratogenic, or sensitizing materials.
11. The material may react violently with air or moisture or is potentially shock-sensitive.
12. Cyanide bearing waste.
13. Waste with EPA waste codes: D003, D037, D041, D042, F027, F028, all P-listed waste
14. DOT Hazard Classes:
 - a. 4.2 - spontaneously combustible
 - b. 4.3 - water reactive
 - c. 5.1 - oxidizers
 - d. 5.2 - organic peroxides
 - e. 6.1 - poison inhalation hazards (A,B,C,D)
15. Acids > 50% strength
16. Bases >50% strength
17. Hydrogen Peroxide \geq 20%
18. Hydrofluoric Acid – any strength
19. Asbestos - friable or nonfriable
20. Any waste requiring Level B PPE
21. The sample cannot be reasonably tested, such as a filter cartridge, large piece of contaminated material, or contaminated debris.
22. Waste that is being accepted for trans-ship without processing or consolidating on-site.

5.1 Level I Analysis

Prior to acceptance, the Facility opens and inspects (i.e., conducts a Physical Evaluation (M-1)) of each container and bulk load in the waste receiving area except for wastes listed on the Sample-Exempt and Visual Inspection-Exempt list in section [5.0 Shipment Screening, Analysis, and Acceptance](#) of this WAP.

Upon opening each container and bulk load, the Facility performs an examination of the waste and compares the waste to the information on the label(s), manifest/shipping paper, and WIP. This inspection is documented on the Veolia ERD Receiving Report (Drum Weight Sheet) included in [Appendix L: Veolia ERD Receiving Report \(Drum Weight Sheet\)](#).

5.1.1 Physical Evaluation:

The physical examination includes, at a minimum, appearance, color, and odor if detected.

Lab packs not consolidated on-site or prepared by a Veolia employee: The facility only needs to open the lab pack to confirm that it meets the definition of a lab pack.

5.1.2 Records:

The Level I analysis is documented using [Appendix L: Veolia ERD Receiving Report \(Drum Weight Sheet\)](#). A record of all Level I analysis (and how discrepancies were resolved) is maintained by the Facility in accordance with section 17.0 Recordkeeping and Reporting for each container delivery as part of the facility operating record.

5.2 Level II Analysis

The facility conducts a Level II analysis when there is a Level I discrepancy and the Facility retains the waste on-site (does not reject the waste back to the generator). Waste subject to Level II analysis will be labelled as quarantined and placed in the designated quarantined storage area until the discrepancy is resolved.

5.2.1 Representative Sampling:

The Facility collects a representative sample for analytical testing if a discrepancy occurs during the Level I Analysis and the waste is not rejected back to the customer. The representative sample is collected in accordance with the Facility's Sampling SOP (see [Appendix C](#) of the WAP). In the event a shipment from a customer consisting of multiple containers will need Level II Analysis, a representative sample will be collected. The explanation of the number of samples collected in relation to the number of containers in the shipment will be recorded on [Appendix H:WAP WIP Discrepancy Form](#).

The Facility ensures that a representative sample is collected when a container contains waste with multiple layers or phases. When appropriate, individual (un-composited) samples of individual phases layers can be used for analysis to evaluate conformance with WIP information.

5.2.2 Analytical Testing:

The analytical testing required for a Level II analysis are identified in the column titled "Analytical

Method to use” in **Table 1** of this WAP. Analytical testing will be conducted by a laboratory certified or registered under NR 149.

5.2.3 Evaluating the Physical and Analytical Results:

If the Level II analysis identifies a discrepancy with the WIP, the facility takes the following actions:

1. Follow section **10.0 WIP Discrepancies** of this WAP.
2. Clearly mark or label the waste with the word “Quarantined”.
3. The container will be placed and remain in a quarantine area until it is accepted or removed from the facility.
4. Requires a new WIP to be submitted by the generator or generator’s agent when the discrepancy involve the waste’s physical and/or analytical results not matching the waste’s WIP.

5.2.4 Records:

The Level II analysis is documented using the chain of custody document provided by the third party laboratory. A record of all Level II analysis (and how discrepancies were resolved) is maintained by the facility in accordance with section **17.0 Recordkeeping and Reporting** for each container or bulk load subject to a level II analysis.

5.3 Final Acceptance and Placement of Waste in Storage

Upon verification that the container and its waste contents through the Level I waste screening process, the container is then moved from the receiving area to an appropriate licensed storage unit or removed and placed into transportation. Level I analysis is conducted within 24 hours upon receipt of the waste. If any waste does not conform to the corresponding WIP and other applicable records is quarantined until the discrepancy is resolved with the generator, returned to the generator, or Level II analysis is conducted.

Level II analysis will be completed no later than 15-days after receipt of the waste. If Level II analysis determines the waste can be accepted, it will be removed from the quarantine area and placed into the appropriate licensed storage unit. If the waste cannot be accepted, it will be returned to the generator.

A waste may be accepted but still rejected, if the Facility determines after signing the manifest that the waste does not conform to the corresponding WIP; in this case the container is labelled for (and placed into) quarantine.

The Facility complies with the following subchapter CC controls when containerized hazardous waste has an average volatile organic (VO) concentration of at least 500 parts per million by weight (ppmw) at the point of waste origination. See Section 4.10, Air Emission Management, of the FPOR for additional information.

Containers that are ≤ 26.4 gallons ($.1 \text{ m}^3$)

Exempt from subchapter CC requirements.

Containers that are > 26.4 gallons ($.1 \text{ m}^3$) ≤ 121 gallons ($.46 \text{ m}^3$) (Level 1 Controls)

Requires the hazardous waste container to be one of the following:

- An approved U.S. DOT container.
- Container equipped with a cover and closure devices for each opening that has no visible gaps or other openings.
- An open-top container with an organic vapor-suppressing barrier.

Containers that are > 121 gallons (.46 m³) (Level 2 Controls)

Requires the hazardous waste container to be one of the following:

- An approved U.S. DOT container.
- A container that operates with no detectable organic emissions per Method 21 in Appendix A of 40 CFR 60.
- A demonstrated vapor-tight container per Method 27 in Appendix A of 40 CFR 60, as modified by s. NR 664.1086(8), Wis. Adm. Code.

Containers that are >26.4 gallons (.1 m³) and waste stabilization is occurring within the container (Level 3 Controls)

Requires the hazardous waste container to be one of the following:

- Vented directly to a control device.
- Is located inside an enclosure that is vented through a closed-vent system to a control device.

When the Facility claims that a VO waste container is exempt from subchapter CC controls, then the Facility will comply with s. NR 664.1082(4) Wis. Adm. Code for each of those containers.

6.0 Waste Consolidation

Certain processing activities such as bulking, containerizing, consolidating, lab packing/repacking, and elementary neutralization do not require a hazardous waste treatment license when hazardous waste treatment is not occurring. For example, repackaging waste from larger to smaller container or from a smaller to larger container is not treatment provided the intent is to make the waste more cost-effective for shipment to a TSD Facility, and provided that any reduction in the hazards due to this activity is incidental (i.e., not the intent of the activity)¹.

Consolidation that involves hazardous waste treatment does not take place at the VESTS facility.

6.1 Lab Packs

Wastes to undergo lab packing/repacking are reviewed to ensure they are compatible with other wastes to be placed in the same container and with the container. Additional compatibility testing is not required since the waste is not being mixed.

Lab packing only occurs using a clean container that is free of any potentially incompatible materials, structurally sound, made of materials compatible with the wastes, and are leak proof when closed.

¹ RO 11497: <https://rcrapublic.epa.gov/files/11497.pdf>

RO 12458: <https://rcrapublic.epa.gov/files/12458.pdf>

RO 13764: <https://rcrapublic.epa.gov/files/13764.pdf>

6.2 Containers, Tankers and Roll-Offs

Bulking operations are not currently conducted at the Facility. Prior to initiating any bulking activities, Veolia will submit a formal notification to the regulatory agency to ensure full compliance with all applicable RCRA regulations and permit requirements governing such operations. See Section 4.0 of the FPOR.

Wastes are only consolidated into containers, tankers or roll-offs that are free of any potentially incompatible materials, structurally sound, made of materials compatible with the wastes, and are leak proof when closed. If the container, tanker or roll-off was previously used or is not free of contamination, it is cleaned to eliminate any previous residues or contamination that may be incompatible. If the tanker, roll-off or container is not cleaned of all residues, then the compatibility testing will include the residues that remain in the container, tanker or roll-off before consolidation.

6.3 Documentation

The Facility uses the Lab Pack Contents form (see [Appendix B](#) Lab Pack Contents Form) when lab packing smaller containers.

7.0 Treatment

The Facility conducts hazardous waste treatment that requires a hazardous waste license. Section 291.01(21) Wis. Statute defines treatment as: *“Any method, technique or process, including neutralization, which follows generation and which is designed to change the physical, chemical or biological character or composition of any hazardous waste so as to neutralize the hazardous waste or so as to render the waste nonhazardous, safer for transport, amenable for recovery, amenable for storage or reduced in volume.”* The first part focuses on whether a given activity changes the properties of a hazardous waste. *“Any method, technique or process, including neutralization, which follows generation and which is designed to change the physical, chemical or biological character or composition of any hazardous waste ...”* The second part looks at the intent of the waste management activity. *“... so as to neutralize the hazardous waste or so as to render the waste nonhazardous, safer for transport, amenable for recovery, amenable for storage or reduced in volume.”*

The VESTS facility has a hazardous waste license for treatment of mercury in retort ovens. The majority of the waste containing mercury will be generated as a result of spills, articles or devices containing mercury being taken out of service, or fluorescent lights destined for recycling. Although the wastes do not meet the definition of unused chemicals, the physical and chemical properties of such wastes will not have changed from those the original material. As such, it is anticipated that an inventory of the components of the waste is sufficient to satisfy the waste analysis requirements.

Profiles for mercury-containing articles and mercury-contaminated debris will be evaluated to determine they contain recoverable amounts (e.g., presence of free mercury). In accordance with NR 666.100(4)(b)1., the profiles will be evaluated to determine whether the waste contains less than 500 ppm by weight total NR 661 Appendix VIII organic constituents. Wastes that contain less than 500 ppm by weight Appendix VIII organic constituents will then be evaluated for their heating content. Wastes with less than 5,000 Btu/lb will be designated as being acceptable for retort under

NR 666.100(4)(b)2. Wastes that contain greater than 5000 Btu/lb will be evaluated to determine whether the waste is specifically listed in NR 666 Appendix XIII. If the waste is included in Appendix XIII, the waste will be approved for retorting in accordance with NR 666.100(4)(c). The mercury-contaminated debris may include the mercury-bearing materials outlined in NR 666 Appendix XIII including:

1. Activated carbon
2. Decomposer graphite
3. Wood
4. Paper
5. Protective clothing
6. Sweepings
7. Respiratory cartridge filters
8. Cleanup articles
9. Plastic bags and other contaminated containers
10. Laboratory and process control samples
11. K106 and other wastewater treatment plant sludge and filter cake
12. Mercury cell sump and tank sludge
13. Mercury cell process solids
14. Recoverable levels of mercury contained in soil

If the waste is not specifically listed in Appendix XIII the waste will not be approved for retort. If the generator does not provide certification, the waste will be tested for total organic compounds and total semi-volatile compounds per the applicable analytical method. Wastes exhibiting a toxicity characteristic of NR 661.0024 for an organic constituent will not be accepted for retort. Hazardous wastes listed in Subchapter D of NR 661 because it is listed for an organic constituent, as identified in Appendix VII of NR 661, will not be accepted for retort.

The product resulting from the mercury retort system is the mercury that is recovered, transferred into a metric ton keg and marketed as a valuable product. The mercury reclaimed from the operations is shipped off-site for further purification.

Treatment residues are typically generated when wastes are treated. Treatment residues generated by the Facility are subject to the generator requirements of ch. NR 662 Wis. Adm. Code and not the TSDF requirements of ch. NR 664 Wis. Adm. Code. There is often more than one type of treatment residue generated when treating hazardous waste (May 26, 1998, federal register; 63 FR 28610). One of these treatment residues is the waste that is being treated (i.e., the primary treatment residue) and the other is the waste generated from the treatment of that waste (i.e., the secondary treatment residue).

7.1 Post Retort Residue and Waste Analysis (NR 670.012(1)(b))

The secondary residue from the mercury retort system is the resultant solids from the treated waste materials. These secondary residues are characterized and managed per the generator requirements of NR 662

Several residues, waste streams and by-products are generated as a result of the mercury retorting operations, including:

- Post retort phosphor powder
- Post retort debris/devices
- Unprocessed debris with unrecoverable mercury content (e.g., empty pails)

One sample per month is collected from a batch post retort phosphor powder and analyzed for total and TCLP mercury content. The post retort phosphor powder is then accumulated as a commercial product and may be sold for rare earth recovery. If the recovery of rare earth elements is not possible, the post retorted phosphor powder is managed as a solid waste.

Post retort debris/devices is sampled on batch basis and analyzed for total and TCLP mercury content. Post retort debris/devices will be managed for underlying constituents and waste codes as necessary (e.g., leaded glass from neon lights). The post retort analytical results are evaluated against the TCLP mercury level (0.2 mg/L) and the total mercury Land Disposal Restriction (LDR) limit of 260 mg/kg. If the post retort testing exceeds these limits, the waste material will re-enter the retort process.

The unprocessed debris with unrecoverable mercury will be shipped off-site for micro-encapsulation as a D009.

Other wastes are generated from the operations. The type of waste and how they are managed are described below:

- Mercury contaminated carbon, pre-filters and HEPA filters are accumulated in drums and then processed through the retort ovens to recover the captured mercury.
- Mercury contaminated waters are accumulated in drums and shipped off-site for disposal.
- Potentially mercury contaminated condensate water from the natural gas combustion. Because the flue gas will pass through a heat exchanger, moisture will condense and will be collected as water in totes before the flue gases enter the pre-filter and activated carbon filter. The totes will be located inside the retort room. The water will be collected in the drums and initially managed as a hazardous waste characteristic for TCLP mercury (D009). Monthly samples will be collected of the water and tested for the first year of operation (12 total samples). After one year, the sampling will be completed annually. The quantities of condensate water generated is dependent upon the amount of natural gas consumed during a period of time and the ambient moisture content in the outside air feeding the combustion chamber.

7.2 Post Retort Performance Sampling (NR 670.023(4)):

Several waste streams and by-products are generated as a result of the mercury retorting operations, including:

- Post retort phosphor powder
- Post retort debris/devices

One sample per month is collected from a batch post retort phosphor powder and analyzed for total and TCLP mercury content. The post retort phosphor powder is then accumulated as a commercial product and sold for rare earth recovery. If the recovery of rare earth elements is not possible, the post retorted phosphor powder is managed as a solid waste. Post retort debris/devices is sampled on

batch basis and analyzed for total and TCLP mercury content. Post retort debris/devices will be managed for underlying constituents and waste codes as necessary (e.g., leaded glass from neon lights). The samples are collected and analyzed in accordance with the Waste Analysis Plan. The post retort analytical results are evaluated against the TCLP mercury level (0.2 mg/L) and the total mercury Land Disposal Restriction (LDR) limit of 260 mg/kg. If the post retort testing exceeds these limits, the waste material will re-enter the retort process.

8.0 Restricted Wastes

The Facility does not accept the following waste:

1. Waste codes not identified in the Part A Application (See [Appendix J](#) Part A Waste Codes).
2. Radioactive wastes.
3. Explosive materials
4. Pyrophoric materials
5. Select agent materials
6. PCB waste > 50 ppm
7. Any other waste that cannot be properly or safely managed at the Facility, as determined by the Facility Manager or designee.

9.0 Manifest and Bill of Lading Discrepancies

The Facility reviews each manifest and bill of lading to verify that all required information has been entered. Materials received that do not match the receiving paperwork or there is a readily identifiable error associated with the shipping papers will be designated as non-conforming and the discrepancy will be resolved before the material can be accepted into the facility.

1. When identified receiving personnel will initiate a Profile Discrepancy form (Appendix H WAP WIP Discrepancy Form).
2. The receiving personnel will complete the form with as much information is available to them and will route the Profile Discrepancy Form to the office to work with the customer to resolve the discrepancy.
 - a. If the required information is missing or incorrect, then the Facility contacts the generator for the missing information or for the correct information.
 - b. The Facility documents these changes in the Facility operating record.
 - c. The manifest or bill of lading identifies the approved WIP number for each waste stream.
3. While the discrepancy is being resolved, the material will be placed on hold, an "Attention" label will be dated with the date of arrival and be affixed to the container, and the material will not be processed until the discrepancy is resolved.
4. Additionally, a copy of the Profile Discrepancy Form will be affixed to the container.
5. In cases where the material in question is a hazardous waste, the material will be placed into a storage pod for storage pending discrepancy resolution.
6. Upon resolution the "Attention" label will be removed or will be covered with the barcode label.

Manifest and bill of lading discrepancies are any of the following:

1. Significant discrepancies in quantity, including but not limited to any of the following:
 - a. For bulk waste, variations greater than 10% in weight or volume.

- i. Bulk containers able to be forklifted such as cubic yard boxes and totes will be weighed on the scale.
 - ii. Bulk material in tanker trucks will be weighed on the truck scale.
- b. For containerized waste any variation in piece count.
- 2. Significant discrepancies in type are obvious differences which can be discovered by inspection or waste analysis (e.g., waste solvent substituted for waste acid, or toxic constituents not reported on the manifest or shipping paper).
 - a. Rejected wastes or wastes that are accepted after re-profiling or a profile change, based on the Level I and II evaluation and analyses, which may be a full or partial shipment of waste.
 - b. Container residues, which are residues that exceed the limits for empty containers set forth in s. NR 661.0007(2) Wis. Adm. Code.

The Facility follows the procedures in section s. NR 664.0072(3) Wis. Adm. Code to address manifest discrepancies – including those VSQGs who use a manifest. The Facility also resolves discrepancies related to waste on bill of lading. In addition to following s. NR 664.0072(3) Wis. Adm. Code the Facility also does all the following:

1. Decide if the waste can be accepted by the Facility despite the discrepancy. This may require obtaining additional information from the generator/customer, as noted above, and involves a determination whether the Facility, and the destination Facility, can manage the waste in a manner that is safe, effective, and in accordance with the conditions of the Facility's license
2. If the waste cannot be accepted, reject it in accordance with section and section [8.0 Restricted Wastes](#) of this WAP.
3. Perform a WIP re-evaluation to determine if a new or revised WIP is necessary. This could involve acquiring a new or modified WIP from the generator for re-evaluation and re-certification, such as a Level II Analysis. The new or revised WIP is then subject to the Pre-Qualification process described in section [2.0 Waste Prequalification](#) of this WAP.
4. Maintains records that document proper completion of the above actions. Refer to section [17.0 Recordkeeping and Reporting](#) of this WAP for recordkeeping.
5. Prior to accepting additional waste from the generator having a discrepancy as described in this section of the WAP, the Facility requires the generator to submit documentation describing what caused the discrepancy and what action(s) will be taken to prevent that discrepancy from occurring in the future.
6. If the discrepancy is not resolved within 15 days after receiving the waste, the Facility will submit to the WDNR a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest or shipping paper at issue.

Additional information and requirements regarding discrepancies is provided in sections [5.0 Shipment Screening, Analysis, and Acceptance](#) to [5.3 Final Acceptance and Placement of Waste in Storage](#) and section [10.0 WIP Discrepancies](#) of this WAP.

10.0 WIP Discrepancies

Section NR 664.0013(1)(a) Wis. Adm. Code requires the Facility to know how to treat, store, and dispose of the waste it receives from off-site in accordance with chs. NR 664 and 668 Wis. Adm. Code and the Facility's conditions of its RCRA license. Therefore, the Facility will ensure that the information

in the WIP including the LDR document is correct.

If there is a discrepancy based on the results of a Level I or II Analysis between the waste received at the Facility and the waste's WIP, then the Facility performs all of the following:

1. Reject the waste (see section 11.0 of this WAP). In the case of a Level I Analysis discrepancy it may be determined to perform a Level II Analysis or reject the waste back to the customer, depending on the situation. Wastes identified in section 8.0 Restricted Wastes of this WAP will be rejected.
2. Attempt to resolve the discrepancy by calling the generator and requesting additional information.
3. Decide if the waste can be accepted by the Facility despite the discrepancy, after determining that the Facility can manage the waste on-site in a manner that is safe, effective, and in accordance with the conditions of the Facility's license.
4. If the waste is not rejected, a new or revised WIP will be developed. A new WIP is prepared by the generator (or agent) and is subject to the process described in section [2.0 Waste Prequalification](#) of this WAP. A revised WIP may be prepared by the Facility with the approval of the generator or authorized agent, and written documentation of this approval will be maintained with the WIP.
5. If the waste is not rejected, ensure that discrepancies are properly entered on the manifest or shipping paper (Line item 18 of the manifest).
6. Have the generator provide a written corrective action plan to the Facility that describes the reason for the discrepancy and actions to be taken to prevent re-occurrence.
7. Document the cause and resolution of the discrepancy in the operating record together with a copy of the manifest.
8. Maintains records that document proper completion of the above actions. Refer to section [17.0 Recordkeeping and Reporting](#) of this WAP for recordkeeping.

Veolia employs a sophisticated electronic system for tracking discrepancies in waste management, designed to streamline processes, ensure accuracy, and maintain regulatory compliance. This system facilitates rapid identification, documentation, and resolution of discrepancies throughout the waste handling lifecycle.

Key Features and Benefits:

1. Expedited Processing: Accelerates discrepancy reporting and resolution
2. Data Reliability: Captures accurate, detailed information on discrepancies and resolutions
3. Historical Analysis: Enables easy retrieval of discrepancy history by generator, date, and other parameters
4. Proactive Management: Aids in preventing and resolving future discrepancies

Discrepancy Identification Stages:

1. Receipt and Inspection:
 - Conducted by operations personnel
 - Focus on readily identifiable visual discrepancies
 - Examples: Solid waste received as liquid, presence of liquids in debris waste
2. Waste Storage and Processing:
 - Ongoing monitoring during treatment or handling procedures

- Identification of any unexpected waste properties or reactions
3. Transhipped Waste Verification:
- Information received from final disposal sites
 - Linked to Veolia's unique identifier number for original generator tracing
 - Data entered into the electronic waste tracking system

Additional information and requirements regarding discrepancies is provided in Section [9.0 Manifest and Bill of Lading Discrepancies](#), [Appendix H](#):WAP WIP Discrepancy Form, and section [10.0 WIP Discrepancies](#) of this WAP.

11.0 Rejection of Inbound Hazardous Waste

The Facility follows the procedures set forth at s. NR 664.0072(4) to (7) Wis. Adm. Code when rejecting hazardous waste containers. In addition to following s. NR 664.0072(4) to (7) Wis. Adm. Code the Facility also does all of the following:

1. Place the rejected hazardous waste in the Facility's quarantine area.
2. Clearly label each rejected hazardous waste container with the words "Rejected"
3. Ensure that the rejected hazardous waste is safely and properly containerized
4. Maintains records that document proper completion of the above actions. Refer to section [17.0 Recordkeeping and Reporting](#) of this WAP for recordkeeping.

Additional information and requirements regarding discrepancies is provided in sections [5.0 Shipment Screening, Analysis, and Acceptance](#) to [5.3 Final Acceptance and Placement of Waste in Storage](#) and section [10.0 WIP Discrepancies](#) of this WAP.

12.0 Outbound Hazardous Waste Shipments

Whenever a shipment of hazardous waste is initiated from the Facility, the Facility complies with the waste determination and recordkeeping requirements in s. NR 662.011, Wis. Adm. Code, the generator's manifesting requirements under subchapter B of ch. NR 662 Wis. Adm. Code and s. NR 664.071(3) Wis. Adm. Code, the LDR requirements of s. NR 668.07 Wis. Adm. Code, and the exception reporting requirements in s. NR 662.042(1) Wis. Adm. Code when a signed copy of the manifest is not received within 35 days of the date the waste was accepted by the initial transporter.

For wastes generated from the operation of licensed units and to comply with generator waste determination requirements, the Facility may rely on, as acceptable knowledge, information from the applicable WIP(s) provided by the original waste generator(s), but only if this information demonstrates compliance by the original generator with waste determination requirements in s. NR 662.011, Wis. Adm. Code. Examples of these sorts of wastes are:

- Trans-shipped wastes
- Consolidated or bulked wastes
- Lab-packed wastes
- Blended fuels
- Spill cleanup residues
- Contaminated PPE
- Used containers

13.0 Waste Sampling

Samples used for waste determinations and Level I and II Analyses will be representative and the procedures for collecting these representative samples are identified below. Sampling equipment is typically constructed of non-reactive materials such as glass, PVC plastic, aluminum, or stainless steel. Care is taken in the selection of the sampling device to prevent contamination of the sample and to ensure compatibility of materials. For example, glass bottles are not used to collect hydrofluoric acid wastes.

Collected samples are either returned to their original container or combined with compatible materials prior to shipment off-site for proper disposal. Waste material generated by sampling activities (e.g., COLIWASA, drum thief) is either returned to the original waste container or the Facility utilizes a new container to store the waste.

13.1 Sampling Methods

The methods and equipment used for sampling waste vary with the form and consistency of the waste to be sampled. The Facility selects the most appropriate representative sampling methods, techniques, devices, and containers from those included/described in either the EPA document “Test Methods for Evaluating Solid Wastes” (SW-846) or the “American Society for Testing and Materials” (ASTM) standards. A representative sample is defined as a sample exhibiting average properties of the whole waste (NR 660.10(101) Wis. Adm. Code).

The Facility’s sampling procedures are included in [Appendix C](#) of this section.

13.2 Sampling Personnel

All sampling is performed by Facility personnel who have been trained in proper sample collection. This training is documented in the operating record, including at a minimum the description of the training contents, the name of the trainer(s), the name of the individual trained, and the date.

13.3 Sample Documentation

Samples collected for on-site Level I analysis are documented utilizing Appendix L: Veolia ERD Receiving Report (Drum Weight Sheet).

All Level II analytical results are documented utilizing the third laboratory report. Chain-of-custody forms provided by the third-party laboratory are used for tracking samples sent for off-site laboratory analyses and testing.

13.4 Sample Labels

Labels are affixed to each sample container prior to, or at the time of, sampling. Veolia will follow the directions of the third-party laboratory regarding sample labeling requirements. However, at a minimum, the labels include the following information:

1. Name of sample collector
2. Date of collection
3. Correlation between the container and line on the chain-of-custody form.

4. Generator information
5. Sample description
6. Profile identification number
7. Document number
8. Shipping information
9. Sample type

Samples will be sent to an outside lab and will be accompanied by instructions and chain-of-custody documentation provided by the laboratory.

14.0 Parameters and Rationale

Table 2 summarizes Level I Physical Evaluation method used to determine the general and specific characteristics of a waste stream. Reference methods for analytical testing for Level II Analysis will be determined by the third-party laboratory used for testing.

Table 2: Analytical Parameters and Rationales

Parameter	Method Number	Reference Method(s)	Rational for Selection*
Physical Evaluation	M-1	Not applicable	Used to determine the general characteristics of the waste stream. This facilitates subjective comparison with WIP information regarding physical characteristics of the waste. Facility personnel check for appearance, color, layering, and viscosity. If an odor is detected, then note if the odor is applicable to the waste. Tolerance limits: Must match description in WIP

* A discrepancy may occur if other information indicates that the waste differs from that described in the WIP.

15.0 Test Methods

The test methods used to confirm that the waste received by the Facility conforms to the corresponding WIP are described below. Other than M-1: Physical Evaluation, all other test methods will be conducted by a third party contracted certified laboratory.

M-1: Physical Evaluation

The physical evaluation includes, at a minimum, appearance, color, and odor if detected. The physical evaluation includes:

1. Color.
2. If an odor is detected, then note if the odor is applicable to the waste.

16.0 Quality Assurance and Quality Control

16.1 Training

All personnel that implement the procedures of this WAP will be competent and properly

trained. The facility maintains and implements a training plan that describes personnel training requirements, procedures, and protocols. In addition, the facility meets the requirements of the training requirements of NR 664.0016 and the approved training plan required by NR 670.014(2)(L) that is included in Section 13 of the FPOR.

16.2 Conclusion

These sampling and analysis quality practices help ensure the data obtained are precise and accurate for the waste stream being evaluated, sampled and tested. The analytical results are used by facility management to decide whether or not to accept a particular waste and, upon acceptance, to determine the appropriate method of treatment, storage, and disposal. Results are also important to ensure that wastes are managed properly by the facility and that incompatible wastes are not inadvertently combined or improperly containerized. The quality of these results are as important as the results themselves. Thus, the quality of the analytical data, along with the thoroughness and care with which the sampling and analyses are performed and reported, provides an important basis for day-to-day operational decisions, compliance, and safety.

17.0 Recordkeeping and Reporting

Recordkeeping: At a minimum, the following WAP records are maintained in the facility's operating record and are made available to WDNR and EPA when requested. Unless specified otherwise, records will be retained for at least three years.

1. WIP documentation and results of all Level I and II Analysis for each waste:
 - a. If applicable, a copy of the chain of custody document.
 - b. Copies of all applicable analytical test results and lab reports.
 - c. A copy of the manifest(s).
 - d. A copy of the WIP and, if applicable, a copy of the revised WIP, all WIP attachments and supporting documentation, and a copy of the approval of the WIP.
 - e. Certifications that the waste generating process and the chemical and physical characteristics of the waste remain unchanged and that the WIP remains complete and accurate.
 - f. Documentation on how the Facility obtained representative samples.
 - g. Documentation of any discrepancies identified by the Level I or II Analysis and how the Facility resolved those discrepancies.
 - h. Level I Appendix L: Veolia ERD Receiving Report (Drum Weight Sheet)
 - i. Level II Appendix H: WAP WIP Discrepancy Form
2. Records of analyses, corrective action plans, and other actions taken under this WAP.
3. Other specific documentation and records as specified in this WAP.

Reporting: The following reports related to WAP activities will be provided to WDNR. All reports will be provided to the WDNR Region contact person (field inspector) assigned to the Facility and to the WDNR TDSF inspector. If these individuals are not known, the Facility will contact the Hazardous Waste Section Chief for instructions.

1. Amended manifest report required in NR 664.0072(7)
2. Unmanifested waste reports required in NR 664.0076

3. All reports applicable to WAP topics required by NR 600 – 670 and by the Facility license.

Daily Acceptance Reports: Daily acceptance reports are printed from the electronic inventory. See section 7.3.5.1, Daily Acceptance Reports, within Section 7.0 Recordkeeping and Reporting of the FPOR, for additional information.

18.0 Corrective Action

The Facility subcontracts with an independent laboratory certified or registered under ch. NR 149 for all Level II Analyses. The Facility and subcontracted laboratories have processes in place to ensure quality assurance and quality control (see Section 16.0 [Quality Assurance and Quality Control](#) of this WAP). In addition, the Facility and subcontracted laboratories have methods for correcting problems when they are identified. If problems/discrepancies are found, the Facility must take corrective actions, such as performing an audit of the laboratory, reviewing and revising applicable SOPs, evaluating subcontracted laboratories and entering into new subcontracts if the Facility has a concern about the quality of work.

19.0 Appendices

1. [Appendix A: Waste Information Profile \(WIP\) Form.](#)
2. [Appendix B: Lab Pack Contents Form.](#)
3. [Appendix C: Standard Operating Procedures for Opening and Sampling Container.](#)
- 4.
- 5.
- 6.
- 7.
8. [Appendix H: WAP WIP Discrepancy Form.](#)
- 9.
10. [Appendix J: Part A Waste Codes](#)
11. [Appendix K: Waste Shipping and Receiving](#) Procedure
12. [Appendix L: Veolia ERD Receiving Report \(Drum Weight Sheet\)](#)

Appendix A: Waste Information Profile (WIP) Form



Veolia Applied

Bill-To
Service Location
Disposal Code

WASTESTREAM INFORMATION PROFILE

- ☐ Profile Recertification
☐ No Changes Made During Recertification

TUFHRestricted

Disposal Technology Requested

1. **Generator EPA ID No.**

Generator Name

Generator State No.

Address

State Wastestream No.

City

State

Country USA

ZIP

NAICS Code

SIC Code

Source Code

Form Code

Origin Code

2. **Waste Name**

Lab or Waste Area

3. **Process Generating Waste**

4. **Shipping Name**

Hazard Class

UN/NA No.

PG

RQ amt

lb

RQ Desc: 1.

2.

DOT Desc: 1.

2.

5. **Waste Codes**

Wastewater ☐

Non Wastewater ☐

Sub Category

6. **Physical and chemical properties**

(check all that apply)

pH

- a ☐ < 2
b ☐ 2 - 5
c ☐ 5 - 9
d ☐ 9 - 12.5
e ☐ > 12.5
exact

Specific Gravity

- a ☐ < .8
b ☐ .8 - 1.0
c ☐ 1.0
d ☐ 1.0 - 1.2
e ☐ > 1.2
exact

Flash Point (F)

- a ☐ < 80
b ☐ 80 - 100
c ☐ 101 - 140
d ☐ 141 - 200
e ☐ > 200
f ☐ no flash exact

Solids

- % suspended
% settleable
% dissolved

% ash
water solubility
BTU/lb

Free Liquid Range to %

Physical State

- s ☐ solid
m ☐ semi-solid
l ☐ liquid
p ☐ pumpable semi-solid
f ☐ flowable powder
g ☐ gas
a ☐ aerosol
r ☐ pressurized liquid
d ☐ debris per 40 CFR 268.45
h ☐ sharps

Hazardous Characteristics

- a ☐ air reactive
w ☐ water reactive
c ☐ cyanide reactive
f ☐ sulfide reactive
e ☐ explosive
o ☐ oxidizing acid
p ☐ peroxide former
r ☐ radioactive or NRC regulated
s ☐ shock sensitive
t ☐ temp sensitive
m ☐ polymerization/monomer
n ☐ OSHA carcinogen
I ☐ infectious
h ☐ inhalation hazard Zone:

Odor

- a none ☐
b mild ☐
c strong ☐

describe

Halogens

- Br % Bromine
Cl % Chlorine
F % Fluorine
I % Iodine

Layers:

a ☐ **multilayered:**

b ☐ **bi-layered:**

c ☐ **single phase:**

**Viscosity
by
Layer:**

- Top Layer
☐ high (syrup)
☐ medium (oil)
☐ low (water)
☐ solid

- Second Layer
☐ high (syrup)
☐ medium (oil)
☐ low (water)
☐ solid

- Bottom Layer
☐ high (syrup)
☐ medium (oil)
☐ low (water)
☐ solid

Color

Used oil (Y/N) HOC <1000 ppm ☐ or > 1000 ppm ☐

WIP No.

7. Chemical Composition Total Composition Must Equal or Exceed 100%

Constituent	Range	Unit	Constituent	Range	Unit

Other: (If yes to any of the below, enter the exact chemical names and concentration(s) in the chemical composition section)

8. Is the wastestream being imported into the USA?

Yes ☐ No ☐
9. Does the wastestream contain PCBs regulated by 40CFR?

Yes ☐ No ☐

PCB concentration _____ppm
10. Is the wastestream subject to the Marine Pollutant Regulations?

Yes ☐ No ☐
11. Is the wastestream from an industry regulated under Benzene NESHAP?

Yes ☐ No ☐

If yes, is the wastestream subject to Notification and Control Requirements?

Yes ☐ No ☐

Benzene concentration _____ ppm

Does it contain >= 10% water?

Yes ☐ No ☐

What is the TAB at your facility?

_____ Mg/Yr
12. Is the wastestream subject to RCRA subpart CC controls?

Yes ☐ No ☐

Volatile organic concentration, if known _____ ppmw

CC approved analytical method ☐ Generator Knowledge ☐
13. Is the wastestream from a CERCLA or state mandated cleanup?

Yes ☐ No ☐
14. Does the waste contain any HFC compounds listed in 40 CFR Part 84 Appendix A?

Yes ☐ No ☐
15. Does the waste contain Perfluoroalkyl and Polyfluoroalkyl substances (PFAS) that are regulated under the TRI program?

Yes ☐ No ☐

16. Container Information (Identify UN container marking if known)

Packaging: Bulk Solid ☐ Type/Size:

Bulk Liquid ☐ Type/Size:

Drum ☐Type/Size:

Other

Shipping Frequency: Quantity Per Month☐ Quarter ☐ Year ☐ One Time ☐ Other

17. Additional Information:

Is analytical or an MSDS available that describes the waste? Yes ☐ No ☐ If yes, please attach.

GENERATOR CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 - Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize sampling of any waste shipment for purposes of recertification.

NAME (PRINT OR TYPE)

PHONE

DATE

SIGNATURE

TITLE

FACILITY NOTIFICATION

If approved for management, Veolia ES has all the necessary permits and licenses for the waste that has been characterized and identified by this profile.

TSDF PROCESSING USE ONLY: PPE REQUIRED	No	Yes	Describe
----------------------------------------	----	-----	----------

Veolia ES Technical Solutions, L.L.C.

WIP INSTRUCTIONS

Veolia requires completion of all sections of the Wastestream Information Profile (WIP). Sections not applicable to the wastestream must have N/A written in the space provided.

Documented WIP information is used to comply with TSDF Waste Analysis Plans, RCRA and DOT regulations, Emergency Planning and Community Right-to-Know Act (EPCRA), Pollution Prevention Act, Toxic Release Inventory Report and other regulatory and generator requirements.

MARINE POLLUTANT

- The wastestream is subject to the Marine Pollutant Regulations if:
 1. it is a bulk (>119 gallons) packaging with Marine Pollutant concentration $\geq 10\%$ or Severe Marine Pollutant concentration $\geq 1\%$
or
 2. it is non-bulk Marine Pollutant shipped by vessel (boat) in packages larger than 5 liters (liquid) or 5 kg (solid)
or
 3. it is a non-bulk Severe Marine Pollutant, shipped by vessel (boat) in packages larger than 0.5 liters (liquid) or 0.5 kg (solid).Refer to the list of Marine Pollutants.

OZONE DEPLETING SUBSTANCE (ODS)

Refer to the list of Ozone Depleting Substances.

UNDERLYING HAZARDOUS CONSTITUENT (UHC)

Refer to the list of Underlying Hazardous Constituents (40 CFR 268.48)

BENZENE NESHAP

- The wastestream is subject to Benzene NESHAP notification and control requirements if it:
 1. contains > 10 ppm benzene, **and**
 2. is generated by a chemical manufacturing plant, petroleum refinery or coke by-product recovery plant, **and**
 3. the generator's Total Annual Benzene (TAB) is ≥ 10 Mg/yr

TRI CHEMICAL

- The wastestream is subject to Toxic Release Inventory Reporting if it contains a Section 313 Toxic Chemical and meets Qualifier requirements.

OSHA CARCINOGEN

- OSHA promulgated standards in 1974 to regulate the industrial use of 13 chemicals identified as occupational carcinogens. Exposures are to be controlled through the required use of engineering controls, work practices, and personal protective equipment, including respirators. See 29 CFR 1910.1003-1910.1016 for specific details.

RCRA SUB-PART CC CONTROLS

- Subpart CC Air Emission Control requirements apply to large quantity hazardous waste generators and to treatment, storage, and disposal facilities.
- Waste in containers greater than 0.1 cubic meters (i.e., 26.4 gallons) with greater than 500 ppm volatile organics are subject to this rule., unless otherwise exempted. Allowable controls include DOT approved containers, containers with an adequate cover and closure devices, and containers which operate with no detectable emissions (less than 500 ppm).

TREATMENT INSTRUCTIONS

- Please use the fields above Section 1 to communicate any disposal facility or treatment technology preferences, requirements or restrictions. Examples could include "No Landfill", "Incineration Only", or "Complete Destruction".
- Any information not covered in Sections 1-15 regarding this wastestream should be added to Section 16 "Additional Information".

Appendix B: Lab Pack Contents Form



LAB PACK DRUM INVENTORY

Generator Name:			Drum #
Proper Shipping Name:			Haz. Class:
UN/NA #:	PG:	Zone:	RQ:
Drum Type:		Packing Material:	
EPA/State Waste Codes:			

COUNT AND QUANTITY	CHEMICAL/TECHNICAL NAME	EPA WASTE CODES	L/S/G	COMMENTS

Appendix C: Standard Operating Procedures for Opening and Sampling Containers

Sampling of Containers

Coliwasas, tubes, drum thieves, and corers are examples of the devices used to sample containers. Samples are taken from locations displaced both vertically and horizontally throughout the waste. For liquids (or liquids with precipitated solids), the sample collector uses a Coliwasa or equivalent. The sampling device is inserted into the container from the top and is pushed down slowly until the bottom of the container is reached. The device is sealed to retain the contents. The contents of the sampling device are then transferred to a polyethylene or glass bottle that is labeled with waste identification information.

A corer or equivalent device is used to sample containers that are solid in nature. These containers are generally filled with dirt and sludges. Several areas from the container are sampled and composited into a sample jar in order to ensure a representative sample. The sample collector removes a sample that uniformly represents the waste composition of the container (i.e., all layers and phases are represented in the sample).

When a container contains waste with multiple layers or phases, particular care will be taken to ensure that a representative sample (or samples) is obtained to ensure that each phase/layer is represented.

Sampling of Bulk Material

Bulk solids are sampled using a simple random sampling strategy. The bulk solids container, usually a roll-off box or a dump trailer, is divided into sections. A corer or other similar device is used in each section to draw a sample from varying depths as needed for a representative sample. On occasion, a shovel is used to access lower levels of a bulk container. The samples are composited together so that there is one sample that represents that particular bulk solids shipment.

Bulk liquids are sampled using a Coliwasa or similar device that can sample vertical anomalies. Each compartment of tanker truck is sampled. Compartment samples from the same generator and waste stream are not composited prior to analysis.

Tank trucks without manways are sampled through a valve. The valve is flushed prior to the sample being drawn.

Debris

Not all wastes are amenable to sampling (e.g., universal waste batteries, CRTs, lamps or ballasts, lab packs, etc.). A container of debris often contains a wide variety of materials. For example, it may contain spill absorbent, Tyvek suits, rubber booties, gloves, and paper towels. It may be difficult to obtain a representative sample.

Frozen Waste

The Facility does not sample waste that is frozen. The container is labelled as quarantined and remains in the receiving area or placed in a licensed storage area until the waste can be sampled and be stored on pallets.

Appendix H:WAP WIP Discrepancy Form



DISCREPANCY FORM

Date:		Generator:	
Initiated By:		Storage Location:	
Profile Number:		Document Number:	
Manifest Number:		Container Number(s):	
Sales Order Number:			

Describe Discrepancy:

Response:

Signature	Date	Routing
		Receiving - Make copy of partially completed discrepancy and manifest. Give facility a copy.
		Customer Service: Contact customer, obtain profile approvals as needed, sign and date discrepancy.
		Manager: Accept drums on manifest and make necessary revisions to manifest. Sign and date discrepancy.
		Admin: Make copy of completed discrepancy for file. Accept into EnviroWare.

Appendix J: Part A Waste Codes

D001	D038	K003	K041	K110	P001	P044	P099	P203	U036
D002	D038	K004	K042	K111	P002	P045	P101	P204	U037
D003	D039	K005	K043	K112	P003	P046	P102	P205	U038
D004	D040	K006	K048	K113	P004	P047	P103	U001	U039
D005	D041	K007	K049	K114	P005	P048	P104	U002	U041
D006	D042	K008	K050	K115	P006	P049	P105	U003	U042
D007	D043	K009	K051	K116	P007	P050	P106	U004	U043
D008	F001	K010	K052	K117	P008	P051	P108	U005	U044
D009	F002	K011	K060	K118	P010	P054	P109	U006	U045
D010	F003	K013	K061	K123	P011	P056	P110	U007	U046
D011	F004	K014	K062	K124	P012	P057	P111	U008	U047
D012	F005	K015	K069	K125	P013	P058	P112	U009	U048
D013	F006	K016	K071	K126	P014	P059	P113	U010	U049
D014	F007	K017	K073	K131	P015	P060	P114	U011	U050
D015	F008	K018	K083	K132	P016	P062	P115	U012	U051
D016	F009	K019	K084	K136	P017	P066	P116	U014	U052
D017	F010	K020	K085	K141	P018	P067	P118	U015	U053
D018	F011	K021	K086	K142	P020	P068	P119	U016	U055
D019	F012	K022	K087	K143	P021	P069	P120	U017	U056
D020	F019	K023	K088	K144	P022	P070	P121	U018	U057
D021	F020	K024	K093	K145	P023	P071	P122	U019	U058
D022	F021	K025	K094	K146	P024	P072	P123	U020	U059
D023	F022	K026	K095	K147	P026	P074	P127	U021	U060
D024	F023	K027	K096	K148	P027	P075	P128	U022	U061
D025	F024	K028	K097	K149	P028	P077	P185	U023	U062
D026	F025	K029	K098	K150	P029	P082	P188	U024	U063
D027	F026	K030	K099	K151	P030	P084	P189	U025	U064
D028	F027	K031	K100	K156	P033	P085	P190	U026	U066
D029	F028	K032	K101	K157	P034	P087	P191	U027	U067
D030	F032	K033	K102	K158	P036	P088	P192	U028	U068
D031	F034	K034	K103	K159	P037	P089	P194	U029	U069
D032	F035	K035	K104	K161	P038	P092	P196	U030	U070
D033	F037	K036	K105	K169	P039	P093	P197	U031	U071
D034	F038	K037	K106	K170	P040	P094	P198	U032	U073
D035	F039	K038	K107	K170	P041	P095	P199	U033	U074
D036	K001	K039	K108	K171	P042	P097	P201	U034	U075
D037	K002	K040	K109	K172	P043	P098	P202	U035	U076

U077	U116	U154	U194	U244					
U078	U117	U155	U196	U247					
U079	U118	U156	U197	U248					
U080	U119	U157	U200	U249					
U081	U120	U158	U201	U271					
U082	U121	U159	U202	U278					
U083	U122	U160	U203	U279					
U084	U123	U161	U204	U280					
U085	U124	U162	U205	U328					
U086	U125	U164	U206	U353					
U087	U126	U165	U207	U359					
U088	U127	U166	U208	U364					
U089	U128	U167	U209	U367					
U090	U129	U168	U210	U372					
U091	U130	U169	U211	U373					
U092	U131	U170	U213	U387					
U093	U132	U171	U214	U389					
U094	U133	U172	U215	U394					
U095	U134	U173	U216	U395					
U096	U135	U174	U217	U404					
U097	U136	U176	U218	U409					
U098	U137	U177	U219	U410					
U099	U138	U178	U220	U411					
U101	U140	U179	U221						
U102	U141	U180	U222						
U103	U142	U181	U223						
U105	U143	U182	U225						
U106	U144	U183	U226						
U107	U145	U184	U227						
U108	U146	U185	U228						
U109	U147	U186	U235						
U110	U148	U187	U236						
U111	U149	U188	U237						
U112	U150	U190	U238						
U113	U151	U191	U239						
U114	U152	U192	U240						
U115	U153	U193	U243						

Appendix K: Waste Shipping and Receiving Procedure
Standard Operation Procedure OP-01 (document number 999A117)



STANDARD OPERATING PROCEDURE

TITLE:	Waste Shipping and Receiving Procedure	SOP NUMBER:	OP-01
UNIT NAME:	Port Washington	DATE WRITTEN:	12-04-06
WRITTEN BY:	Phillip Ditter	REVISION DATE:	03/01/2025
APPROVED BY:	Matthew Scudder	APPROVER'S TITLE:	Operations Manager

1.0 Purpose:

This Standard Operating Procedure (SOP) outlines the procedures, systems and controls required to safely off-load, handle, and receive waste materials into the facility in accordance with the following regulations and permits:

- NR 673 Wis. Admin. Code
- NR 666 Wis. Admin. Code
- NR 668 Wis. Admin. Code
- Hazardous waste container storage permit

2.0 Scope

This SOP applies to both Port Washington facilities and covers all waste receiving activities. This SOP also includes procedures to be followed in the event of a release of a hazardous substance.

3.0 Definitions

Uniform Hazardous Waste Manifest (Manifest) – the shipping paper required by US EPA regulations for the shipment of hazardous wastes and regulated PCB wastes

ZZ Manifest (ZZ) – a shipping paper formatted the same as a hazardous waste manifest but intended for use in shipping non-hazardous wastes and/or wastes not subject to EPA manifesting requirements.

Bill of Lading (BOL) – a shipping paper used for the shipment of products and wastes that are not subject to the EPA manifesting requirements

Land Disposal Restrictions (LDR) – a set of EPA regulations that prohibit the land disposal of a hazardous waste unless it meets specific treatment standards

4.0 Users

These procedures will be followed by all facility personnel off-loading and receiving wastes. This procedure will also be used when moving containers of waste within the facility. This includes material handlers and supervisory personnel.

5.0 Documentation and Forms

Below is a summary of the forms used for the documentation of receipt of wastes.

5.1 Incoming Shipping Papers

All wastes received from off-site are received into the Mineral Springs Drive will be accompanied by a shipping paper that describes the waste and identifies the source of the waste. The following is a listing of the types of shipping papers received.

- Uniform Hazardous Waste Manifest
- Bill of Lading
- ZZ Manifest

In the case of containers delivered by FedEx under a pre-paid recycling program the label on the container will also serve as the shipping paper.

5.2 Unloading Inspection/Incoming Load List (Form # 999F060)

This form is used to document the inspection of all incoming loads and to record the shipping papers included on the load.

5.3 Lamp Receiving Report (Form # 999F065)

This form is used to record the lamp counts by lamp type for each shipper paper.

5.4 Receiving Report (Form #'s 999F148) and

These forms are used to record the weights of containers of waste being received into the facility. Form 999F148, ERD Receiving Report is used for shipments received from non-Veolia facilities.

5.5 Special Handling Request (Form #: 999F113)

The Special Handling Request form is used to communicate special instructions to personnel involved in the recycling of material for customers that request non-standard procedures. Any special instructions for processing or managing the residual materials must be noted on a Special Handling Request and that form must accompany the material through receiving and processing.

5.6 Enviroware System - Electronic Inventory Tracking

The facility utilizes a computerized inventory tracking system. This tracking system records the generator information and the type and quantity of material received. It also tracks the location of each container, movements of those containers and the ultimate disposition of those containers.

5.7 Profile Discrepancy Form (Form # 999F105)

When the facility receives a material that is not listed on a shipping paper or does not match a waste profile within the system or when there is a discrepancy in the piece count received a Profile Discrepancy Form is created. This form is used to document the type of discrepancy and arrangements made with the customers to resolve the discrepancy.

5.8 LDR Forms

Each manifested shipment of hazardous waste must be accompanied by an LDR Form. This form is intended to notify the receiving facility of the regulatory status of the waste with respect to the LDR regulations. Veolia has developed forms for customer use in complying with these regulations; however, the generator may choose to use an alternate form provided it meets all criteria specified in NR 668. Veolia LDR forms include the Land Disposal Restriction Notification (Form # 999F104) and F039/Underlying Hazardous Constituent Form (Form # 999F101).

5.9 PCB Continuation Form (Form # 999F108)

Each shipment of regulated PCB wastes must be accompanied by a document that identifies the date that the PCB waste was taken out of service, a serial number for equipment or a unique container number for PCB containers, and the weight of the PCB waste in kilograms. In some cases this information may be included on the manifest; however, the most common method for providing this information is the use of a PCB Continuation Sheet.

5.10 Transfer Log (Form # 999F069)

Each shipment of manifested hazardous waste destined for another facility will be recorded on the Transfer Log. This log is used to document compliance with the 10 day transfer requirements for materials in transport.

5.11 Containers Shipment List (Form # 999F061)

As operations personnel put together loads for shipment off-site, a Container Shipment List is used to document the containers loaded and to communicate that information to the office.

5.12 Each shipment of waste will be visually inspected and the waste will be matched against the incoming paper work. This information will be entered in the blue book.

6.0 Hazards

Mercury Exposure

Although all containers of mercury containing lamps and mercury devices are required to be closed prior to shipment, mercury containing lamps will sometimes arrive at the facility improperly packaged and or broken. In this case mercury vapors will be present in the transport vehicle. Air monitoring performed over the course of several years has demonstrated that the average mercury concentration is below the ACGIH TLV.

Mercury is a metallic element that exists as a liquid at room temperature. The elemental form of mercury will also exist as a vapor at room temperature. Mercury in all forms is a toxic material. A material safety data sheet for elemental mercury is

contained within the facility hazard communication program and is available for review by all employees. Below is a summary of the hazards posed by the handling of elemental mercury.

Elemental mercury is a central nervous system toxin. Elemental mercury will also target the kidneys and liver. The primary route of exposure to elemental mercury is the inhalation of mercury vapors. A secondary route of exposure is absorbing elemental mercury through the skin.

In addition to the hazards posed by elemental mercury there are a number of additional physical and chemical hazards associated with the lamp recycling operation.

Physical Hazards

Lifting and Material Handling Hazards

Due to the nature of the material being transported, personnel on the loading dock will not always be able to off-load the transport vehicles using a forklift and may be required to hand off-load. When hand off-loading drums a drum cart should be used to reduce the potential for injury. When hand off-loading boxes a four wheeled cart may be used to reduce the potential for injury.

Knives and Sharp Edges

In order to verify the contents of the containers a representative number of containers must be opened on the loading dock. In many cases a self-retracting utility knife is used to open the containers. When shipments of materials are received from a consolidation facility, the shipment is typically received on pallets that must be broken down to identify the individual generators of the material. In this case, self-retracting utility knives are used to remove the stretch wrap used on the pallets.

Slip/Trip/Fall

When manually off-loading transport vehicles receiving personnel are often transitioning from the loading dock to the transport vehicle that is parked at an incline in the loading dock which presents a trip hazard. Additionally the loading dock space can become very crowded with off-loaded pallets of material, some of which may contain material that protrude out to one side creating a trip hazard.

Chemical Hazards

Cadmium and Lead

Prior to 1988 some fluorescent lamps contained cadmium within the phosphor powder. Lamps may also contain leaded glass or leaded solder. Based on industrial hygiene monitoring conducted at the facility, cadmium and lead are not present within the operation at levels that exceed the OSHA action level.

Other Hazards

Each Monday the facility accepts household hazardous waste from the general public. This material will contain a variety of chemicals, including but not limited to flammable and combustible liquids, pesticides and insecticides and corrosive materials.

7.0 Hazard Prevention and Control

Hazard prevention and control is accomplished through the use of engineering controls, administrative controls and personal protective equipment.

7.1 Engineering controls

Several engineering control measures are used to control both the physical and chemical hazards present and to control the potential for chemical exposures.

These controls include:

- Using mechanical lifting equipment for the lifting and movement of heavier containers
- Using the ventilation system on the loading dock to prevent an over exposure scenario.
- Lighting at the loading dock to provide adequate light inside transport vehicles as they are being off-loaded.
- Using dock levelers to provide suitable access to the transport vehicle.

7.2 Administrative Controls

Several administrative controls are employed to control the hazards.

- Using designated work practices to reduce the potential for breakage and spills.
- Using designated work practices to reduce the potential for injury when performing material handling activities, such as the use of two-man lifts where appropriate.
- Training of personnel on hazard recognition and appropriate emergency response procedures.

7.3 Personal Protective Equipment

Personnel working on this process have the potential to be exposed to a number of physical and chemical hazards. An analysis of the currently defined hazards and potential hazards has been completed and a copy of the job safety analysis is included in Attachment 1. This analysis also includes the control measures and personal protective equipment (PPE) required for each task.

8.0 Specialized Equipment

- Forklifts
- Drum attachment for forklift
- Fork extensions for long pallets of lamps

- Certified Scale
- Hand carts
- Pallet jack
- Drum cart

9.0 Procedures

9.1 Shift Start-up

Each working day, the receiving personnel will follow the procedures listed to begin their respective shifts:

- Perform visual inspection of Receiving Dock Work Area to ensure that it is free of debris or other material from prior shift.
- Perform visual inspection of expendable supplies to ensure that there is sufficient quantity to complete an eight (8) hour shift. This includes forms, labels, writing instruments, and material handling equipment such as, empty steel drums, & pallets.
- Perform visual inspection of necessary tools including forklifts, mechanical lifts, scales and carts and hand tools to insure proper readiness for use. Forklift inspections must be documented using the Forklift Operator Daily Checklist (Form 999F034).
- Complete Load shipment checklist form

9.2 Receiving Procedure at Loading Dock

Upon arrival of a shipment at the Veolia ES Technical Solutions, LLC facility, the following sequence of events occurs:

- The truck is directed to a receiving dock where Veolia ES receiving and technical personnel compare shipping documents and material description against the material profile sheets, and the material actually received. The shipping documents may consist of a Bill Of Lading (BOL), or a Uniform Hazardous Waste Manifest, or a ZZ Manifest, and/or a Land Disposal Restriction (LDR) form.
- The ERD Receiving Report is completed while the shipment is being unloaded. The Report is reviewed and signed by the operations supervisor.
- All manifests must be signed within 72 hours of receipt. If the shipment contains laboratory packaged chemicals (lab packs) the shipping paper will be accompanied by a packing list itemizing the contents of the container. PCB Continuation Forms will accompany the shipping papers associated with PCB shipments.

All paperwork must be kept together and intact for submission to the receiving clerk for further processing and eventual filing.

- As the truck is unloaded, all containers and materials are visually inspected to verify that the shipment contains only the waste materials as described in the material profile sheet and shipping documents. In the case of a bulk waste stream such as soils or liquid wastes a sample is collected from a representative number of drums as specified in the facility Feasibility and Plan of Operation Report (FPOR). These samples are then analyzed in the laboratory following laboratory procedures outlined in the FPOR and lab hygiene program.

Receiving personnel must be especially cognizant when unloading materials to verify against the documentation, the type and quantity of material received.

- All materials received in to the facility, are weighed/counted and immediately moved to temporary storage area(s), hazardous material storage pods, or directly to the processing areas, as in the case of lamps, while the receiving personnel record the shipment information either on a Lamp Receiving Report or an ERD Receiving Report. The receiving personnel will note weight and manifest # on the top of the material so that later matching with a printed identification label is simplified. Information recorded on these logs will be transferred to an Unloading Inspection/Incoming List form.

All information must be recorded accurately and neatly.

- Materials received that do not match the receiving paperwork or there is a readily identifiable error associated with the shipping papers, the material will be designated as non-conforming and the discrepancy must be resolved before the material can be accepted into the facility. When identified, receiving personnel will initiate a Profile Discrepancy form. The receiving personnel will complete the form with as much information is available to them and will route the Discrepancy Form to the office to work with the customer to resolve the discrepancy. While the discrepancy is being resolved, the material will be placed on hold, an orange "Attention" label will be dated with the date of arrival and be affixed to the container, and the material will not be processed until the discrepancy is resolved. Additionally a copy of the discrepancy form will be affixed to the container. In cases where the material in question is a hazardous waste, the material will be placed into a storage pod for storage pending discrepancy resolution. Upon resolution the "Attention" label will be removed or will be covered with the barcode label described below.
- Unloading Inspection/Incoming Lists, Shipping Papers with attachments, Lamp Receiving Reports, ERD Receiving Report, and any Profile Discrepancy forms are submitted to Receiving Clerk for verification and entering into the EnviroWare software.

- The Receiving Clerk then prints barcode labels for all the Materials, which are not immediately processed and provides the label set to the receiving personnel, who in turn place the labels on the material using the manifest # and weight written on the material when received, as an identifier. In the case of a discrepancy resolution the barcode label will be placed over the “Attention” label, unless the “Attention” label can be easily removed prior to labeling.

See JSA Steps: [1,5, and 7](#)

9.3 Ten-day Transfer Procedures

In addition to receiving wastes for processing on-site, the facility will receive shipments containing waste destined/manifested to another facility. In accordance with the hazardous waste regulations, this material will be held on-site within transport trailers for up to ten days. For these materials the facility will conduct the following activities.

- Receiving personnel will make a copy of the manifest and provide a copy to the office for filing.
- Each manifest will also be recorded on the Transfer Log. This information includes the manifest number, designated facility, trailer number, quantity, date in and date out.

9.4 Shipping Procedures

Loading dock personnel are also responsible for preparing shipments for off-site transport. This includes the following activities.

- Container inspection, all containers should be properly marked and labeled by operations personnel before being moved to the dock for loading onto an outgoing transport vehicle. However, the loading dock personnel are responsible for reviewing the packaging, marking and labeling to ensure compliance with the US DOT regulations and end site requirements.
- Loading, all containers must be properly loaded and secured within the transport vehicle. In most cases the loading dock personnel will use forklifts to load palletized containers or use the forklift with a drum grabber attachment to load drums. In the event that drums must be manually loaded, personnel are to use a drum cart.
- Load Securement, the US DOT requires that all containers of hazardous materials must be secured while in transport. Loading dock personnel will use load bars, straps or other devices provided by the transporter to secure the containers within the transport vehicle before releasing the load for transport.
- Container Shipment List completion, the loading dock personnel will verify that all containers on the load are listed on the Container Shipment List and only those containers. Due to vehicle weight restrictions, the list of containers may be modified during the loading process.
- Shipping Paper Completion, office staff will prepare a shipping paper for each shipment. Prior to shipment the shipping paper will be compared to the Container

Shipment List and a final count/weight will be recorded on the shipping paper. In the case of hazardous waste and materials shipments only properly trained personnel will be authorized to sign the shipping paper on behalf of Veolia.

- Placarding, before a transport vehicle is released, loading dock personnel will verify that the vehicle/trailer is properly placarded. A supply of placards is maintained within the office in the event that additional placards are needed.
- Vehicle Security, before a transport vehicle containing hazardous materials or data containing equipment or media is released the vehicle must be secured. Vehicles containing hazardous materials must be locked in accordance with the Veolia hazardous materials security plan. Vehicles with data containing equipment or media must be sealed and the seal number recorded on the shipment list.
- Shipment Tracking, all container shipments are tracked using the Enviroware inventory system. Shipping papers and container shipment lists are used to the office to record the materials shipped.
- Complete shipping form load shipment checklist

See JSA Steps: [3 and 7](#)

9.5 Shift End

Upon completion of a shift at the Veolia ES Technical Solutions, LLC facility, the following sequence of events occurs:

- Prior to the end of the shift, all processing work must be stopped to ensure the proper recording of work completed, compliance with completion of shift procedures, cleaning of work station, return to storage of tools, and removal of completed pallets to proper storage area.
- Unloading Inspection/Incoming List(s), Manifest(s), PCB Certification Form(s), and/or Certified Lab Analysis, Lamp Count Worksheets, ERD Receiving Reports, and any Profile Discrepancy lists are submitted to the Receiving Clerk for verification and entering into the EnviroWare software

9.6 Emergency Shut-down

Both Port Washington facilities have developed contingency plans which define potential emergency scenarios and the activities to be performed by facility personnel in the event of an emergency. The contingency plan also includes provisions for the resumption of facility operations following an emergency.

ATTACHMENT 1

JOB SAFETY ANALYSIS

[JSA](#)

Appendix L: Veolia ERD Receiving Report (Drum Weight Sheet)



VEOLIA ERD RECEIVING REPORT

Port Washington ☐Phoenix ☐Tallahassee ☐West Bridgewater ☐Other ☐

SO #:		DOC #:		RCVD DATE:		BY:
GENERATOR:				TRANS:		
MAN/BOL #:				# OF PALLETS _____ / # OF CONTAINERS _____		
LINE #	LOCATION	PROFILE	PRODUCT CODE or DESCRIPTION	WEIGHT / COUNT	CONTAINER (type/size)	CONTAINER NO.